COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF AGRICULTURE.

BULLETIN No. 132.

TABULATED ANALYSES

OF

COMMERCIAL FERTILIZERS

FROM

SAMPLES SELECTED IN ACCORDANCE WITH ACT OF MARCH, 25, 1901,

BY THE

Pennsylvania Department of Agriculture,

FROM AUGUST 1st, 1904, to DECEMBER 31st, 1904.

WM. STANLEY RAY,
STATE PRINTER OF PENNSYLVANIA,
1905.

DEPARTMENT OF AGRICULTURE.
COMMONWEALTH OF PENNSYLVANIA.

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AN ACT

To regulate the manufacture and sale of commercial fertilizers.

Section 1. Be it enacted, &c., That every package of commercial fertilizer sold, offered or exposed for sale, for manurial purposes, within this Commonwealth, shall have plainly stamped thereon the name of the manufacturer, the place of manufacture, the net weight of its contents, and an analysis stating the percentage therein contained of nitrogen in an available form, of potash soluble in water, of soluble and reverted phosphoric acid and of insoluble phosphoric acid: Provided, That any commercial fertilizer sold, offered, or exposed for sale, which shall contain none of the above named constituents shall be exempt from the provisions of this act.

Section 2. That every manufacturer or importer of commercial fertilizers as specified in section one of this act shall, on or before the first day of January next ensuing, or before offering them for sale in this Commonwealth, file annually with the Secretary of Agriculture an affidavit showing the amount of said fertilizer sold within the Commonwealth during the last preceding year; and if the said amount shall be one hundred tons or less, he shall pay to the Treasurer of the State the sum of fifteen dollars for each and every brand of such commercial fertilizer sold within the State during the last preceding year; and if the said amount shall exceed one hundred tons, and be less than five hundred tons, he or they shall pay the sum of twenty dollars, as aforesaid; and if the said amount shall be five hundred tons or more, he or they shall pay the sum of thirty dollars, as aforesaid. If such manufacturer or manufacturers, importer or importers, shall not have made any sales within the Commonwealth during the preceding year, he or they shall pay the sum of fifteen dollars, as aforesaid. Every said manufacturer shall, at the same time, file with the Secretary of Agriculture a copy of the analysis required by section one of this act, and shall then be entitled to receive from the Secretary of Agriculture a certificate showing that the provisions of this act have been complied with.

Section 3. The Secretary of Agriculture is hereby empowered to collect samples of commercial fertilizers, either in person or by his duly qualified agent or representative, and to have them analyzed, and to publish the results for the information of the public.

Section 4. The Secretary of Agriculture, and such assistants, agents, experts, chemists, detectives and counsel as he shall duly authorize for the purpose, shall have full access, ingress and egress to all places of business, factories, farms, buildings, carriages, cars and vessels, used in the manufacture, transportation or sale of any commercial fertilizer. They shall also have power to open any package or vessel containing or supposed to contain any commercial fertilizer, and take therefrom samples for analysis upon tendering the value of said samples.

Section 5. Any person selling, offering, or exposing for sale, any commercial fertilizer without the analysis required by section one of

this act, or with an analysis stating that it contains a larger percentage of any one or more of the above named constituents that is contained therein, or for the sale of which all the provisions of section two have not been complied with, shall be guilty of misdemeanor, and on conviction shall forfeit a sum not less than twenty-five and not exceeding one hundred dollars for the first offense, and not less than two hundred dollars for each subsequent offense. It shall be the duty of the Secretary of Agriculture to enfore the provisions of this act, and all penalties, costs and fines recovered shall be paid to him or his duly authorized agent, and by him be immediately paid into the State Treasury, to constitute a special fund to be used in accordance with the provisions of section six of this act.

Section 6. The money paid into the Treasury under the provisions of this act shall constitute a special fund, from which the cost of selecting samples, making analyses, and other expenses incident to the carrying into effect the provisions of this act, shall be paid: Provided, That the total amount thus expended shall in no case exceed the amount paid into the Treasury.

Section 7. The term "commercial fertilizers," as used in this act, shall be taken to mean any and every substance imported, manufactured, prepared or sold for fertilizing or manuring purposes, except barnyard manure, marl, lime and wood ashes, and not exempt by the provisions of section one of this act.

Section 8. This act shall go into effect on and after the thirty-first day of December, one thousand nine hundred and one. All acts or parts of acts inconsistent with this act are hereby repealed, except that existing laws are to continue in force until this act goes into effect.

Approved—The 25th day of March, A. D. 1901.

LETTER OF TRANSMITTAL.

State College, Centre County, Pa.

January 4, 1905.

To the Hon. N. B. Critchfield, Secretary of Agriculture, Harrisburg, Pa.:

Sir: I submit herewith a report of the analyses of the official samples of commercial fertilizers received during the fall of 1904 from the department sampling agents. These results are briefly discussed in the summary prefixed to the analytical tables.

Very respectfully,

WM. FREAR,
Chemist.

FERTILIZER VALUATIONS—1904.

The object of an official valuation of commercial fertilizers is to enable the consumer to judge approximately whether he has been asked to pay for a given brand more than the fertilizing ingredients it contains and market conditions prevailing at the time would warrant. It is clear, therefore, that no attempt is made in this valuation to indicate whether the fertilizer valued possesses a greater or less crop-producing capacity than another fertilizer; but only whether it is higher priced than another of the same general composition.

For this purpose it must be so computed as to include all the elements entering into the cost of a fertilizer as it is delivered to the consumer. These elements may be conveniently grouped as follows:

1. The wholesale cost of the ingredients.
2. The jobbers' gross profit on the sale of the ingredients; this includes office expenses, advertising, losses, etc.; for the purpose of the present computation it may be assumed that the sum of this gross profit and the wholesale cost of the ingredients, is equivalent to the retail price of the single ingredients near the wholesale markets in ton lots of original packages for cash.
3. The expense and profit of mixing: This item applies only to complete fertilizers, rock and potash, and ammoniated rock; not to dissolved or ground bone, or to dissolved rock.
4. The expense and profit of bagging.
5. Agents' commission: This item includes not only the commission proper, but every advance in price due to the sale of the goods through an agent in small quantities on time, rather than directly to the consumer in ton lots for cash.
6. Freight from the wholesale market to the point of delivery.

The valuations for 1903 were based:

1. Upon the wholesale prices from September 1, 1902, to March 1, 1903, of the raw materials used in fertilizer manufacture, the quotations of the New York market being adopted for all materials except acidulated phosphate rock and ground bone.
2. Upon an allowance of 20 per cent. of the wholesale prices, above mentioned, to cover jobbers' profits.

By adding the 20 per cent. allowed for jobbers' gross profit to the wholesale price of the several raw materials, the retail price in original packages at the jobbers' warehouse is obtained.

Since the amount of the several valuable fertilizing constituents in the various raw materials is known, it is a simple matter to determine the corresponding retail value per pound of the valuable fertilizing constituents yielded by each raw material. A schedule of these pound values affords a convenient basis of computation of the value per ton of various fertilizers, whose composition is ascertained by analysis.

The values assigned, for the present, to the other elements in the cost of the fertilizer at the point of a delivery are:

3. For mixing, $1.00 per ton.

4. For bagging, $1.00 per ton, in all cases except those in which the article was sold in original package; the cost of the package being, in such cases, included in the wholesale price.

5. For agents' commissions, 20 per cent. of the cost of the goods f. o. b. at the jobbers' or mixers' warehouse.

6. For freight, $2,00 per ton; the cost of the freight in lots of twelve tons or over, from the seaboard to Harrisburg, averaging $1.88 per ton.

The following valuation of dissolved South Carolina rock illustrates the method:

Phosphoric acid.	Per cent.	Weight per ton.	
Soluble,	11.50	230 lbs. at 3c.	$6 90
Reverted,	2.50	50 lbs. at 2½c.	1 25
Insoluble,	1.00	20 lbs at 1½c.	30
Retail cash value of ingredients,			$8 45
Bagging,			1 00
Cash value of goods ready for shipment,			$9 45
Agents' commission, 20 per cent.,			1 89
Freight,			2 00
Commercial value per ton,			$13 34

It is not to be expected, of course, that the valuations thus computed will precisely represent the fair price to be charged for a brand in each locality and in every transaction. Market conditions, competition, distance from factory, all introduce minor variations. Nevertheless, to make the approximation reasonably close the average valuation of a given class of goods ought to agree closely with its ascertained average selling price. Whenever such an agreement is no longer obtained by the use of a schedule, it is evident that the schedule of retail values of the constituents, or the added allowances for mixing, etc., requires revision.

It is needful to note here another factor greatly affecting the practical accuracy of these approximations. Their computation would offer little difficulty and their usefulness be far greater, if, by the ordinary methods of analysis, the exact nature of the ingredients used to supply the several fertilizer constituents, were capable of certain determination. This is, however, possible, to-day, to only a limited extent. The valuations are, therefore based on the assumption that the fertilizers are uniformly compounded from high quality ingredients, such as are commonly employed in the manufacture of fertilizers of the several classes. Consumers should carefully avoid the error of accepting such valuations as infallible; they are not designed to be used for close comparisons of single brands, but only to indicate whether the price asked for a fertilizer is abnormal, assuming good quality for the ingredients used. From this it is clear that, except as high freights may require, the selling price of a brand should not far exceed the valuation; but that a fertilizer may be made of inferior materials and yet have a high valuation.

The valuations used during 1902 were modified for use during 1903 in accordance with the changes in wholesale prices of fertilizing ingredients and to make the valuations more closely follow the selling price.

The following comparative statement shows the valuations and selling prices of the several classes of fertilizers during 1901 to 1903:

Fertilizers.	Number of samples.	Valuation.	Selling price.	Difference of valuation from selling price.
Spring, 1901.				
Complete,	291	24.76	23.92	0.84
Rock-and-potash,	60	14.60	16.20	—1.60
Dissolved bone,	1	29.00	28.00	1.00
Ground bone,	44	28.71	27.59	1.12
Dissolved rock,	49	13.51	13.90	—0.39
Fall, 1901.				
Complete,	179	23.75	22.28	1.47
Rock-and-potash,	42	14.23	16.09	—1 86
Dissolved bone,	5	23.36	23.91	—0.55
Ground bone,	33	27.69	25.94	1.75
Dissolved rock,	49	13.82	13.18	0.64
Spring, 1902.				
Complete,	289	25.33	24.10	1.23
Rock-and-potash,	66	15.05	16.45	—1.40
Dissolved bone,	2	17.35	16.50	.85
Ground bone,	29	26.80	28.52	—1.72
Dissolved rock,	59	13.49	13.73	—.24
Fall, 1902.				
Complete,	229	23.31	21.83	1.48
Rock-and-potash,	62	14.46	15.98	—1.52
Dissolved bone,	6	27.08	25.30	1.78
Ground bone,	27	27.51	28.09	—.58
Dissolved rock,	56	13.70	13.47	.23
Spring, 1903.				
Complete,	365	24.29	24.57	—.28
Rock-and-potash,	82	14.73	17.20	—2.47
Dissolved bone,	3	30.87	31.17	—.30
Ground bone,	27	27.25	28.67	—1.42
Dissolved rock,	56	13.34	15.13	—1.79
Fall, 1903.				
Complete,	264	22.77	21.98	.79
Rock-and-potash,	74	14.86	15.96	—1.10
Dissolved bone,	11	24.57	23.67	.90
Ground bone,	49	27.07	27.52	—.45
Dissolved rock,	60	13.12	14.64	—1.52

The general tendencies of the wholesale market may be judged from the following comparative statement, obtained from the weekly reports of the Oil, Paint and Drug Reporter, of New York City, showing the average wholesale prices of fertilizer raw materials from September 1, 1902, to March 1, 1903, and from September 1, 1903, to March 1, 1904.

Wholesale Prices of Fertilizer Ingredients, New York: *Oil, Paint and Drug Reporter.*

Substance.	Amount priced.	Average price September 1, 1902, to March, 1903.	Average price September 1, 1903, to March, 1904.	Prices September to February, 1903-4, in per cent. of prices 1902-3.
Sulphate of ammonia,	Cwt.,	3.0484	3.1172	102.2
Nitrate of soda,	Cwt.,	1.9873	2.1807	109.6
Dried blood, H. G.,	Unit (20 lbs.),	2.4969	2.5666	102.8
Concentrated tankage,	Ton,	15.50	*15.50	100
Rough bone,	Ton,	17.00	17.96	105.6
Ground bone,	Ton,	20.50	22.40	109.2
Bone meal,	Ton,	19.72	22.42	113.7
Fish guano, dry,	Unit (20 lbs.),	†27.35	‡2.4716	95.5
Fish guano, acid,	Unit (20 lbs.),	†14.23	§2.2331	97.7
Refuse bone black,	Ton,	18.06	18.74	103.7
Phosphate rock (Charleston),	Ton,	9.125	6.00	65.7
Phosphate rock (Tennessee),	Ton,	3.953	3.83	96.9
Acid phosphate,	Unit (20 lbs.),	.625	.6375	102.0
Double manure salts,	Cwt.,	1.1025	1.1307	102.5
Sulphate of potash,	Cwt.,	2.11	2.131	101.0
Kainit,	Ton,	9.05	9.31	102.8
Murlate of potash,	Cwt.,	1.8325	1.8934	103.3
Sulphuric acid 66 Deg. B,	Cwt.,	1.319	1.35	102.3

*No quotations for December, January and February.
†Per ton.
‡Bone phosphate of lime 10 cents per unit.
§Bone phosphate of lime 35 cents per unit.

In ammoniates such as dried blood and fish guano, the unit is of ammonia, of which 82.35 per cent. is nitrogen; in acid phosphates, the unit is of phosphoric acid (phosphorus pentoxid).

The nitrogenous materials and animal sources of phosphoric acid show an advance over last year's prices in almost every instance. Nitrate of soda, ground bone and bone meal have advanced markedly. The advance of price in case of sulphate of ammonia, dried blood, rough bone, and refuse bone black, while not so marked is quite noticeable. Fish guano is the only material which shows a decrease over last year's prices.

The following data are from the monthly reports of Thos. J. White & Co., fertilizer brokers, Baltimore, Md., giving wholesale quotations upon ammoniates:

Wholesale Prices of Ammoniates: Reports of Thos. J. White & Co., Baltimore, Md.:

	Prices September to March, 1902-3.	Prices September to March, 1903-4.
Sulfate of ammonia per cent.,	3.05	§3.11
Nitrate of soda,	1.9275	2.125
Ground blood, f. o. b., Chicago, per unit of ammonia,	2.2925	2.4925
Concentrated tankage, f. o. b., Chicago, per unit of ammonia,	2.085	2.2188
Crushed tankage, c. a. f., Baltimore, per unit of ammonia,:		
9 per cent. ammonia, 20 per cent. bone phosphate,	2.505	2.5792
Ground tankage, f. o. b., Chicago, per unit of ammonia:		
11 per cent. ammonia, 15 per cent. bone phosphate,	.....	†2.3063
10 per cent. ammonia, 15 per cent. bone phosphate,	.....	*2.25
6 per cent. ammonia, 25 per cent. bone phosphate per ton,	‡14.75	15.17
Hoof meal, f. o. b., Chicago, per unit of ammonia,	**2.16	2.279

*Quotations for January lacking.
†January and February quotations only.
‡Quotations for January and February only.
§c. i. f., Baltimore and New York.
**Quotations for September and October lacking.

These quotations, like the previous figures, indicate a marked increase in the price of ammoniates over last year.

The Engineering and Mining Journal, of New York City, gives quotations of nitrate of soda for January, 1903, futures $1.85 to $1.975; spot $1.975 to $2.05. In February, $1.91 for futures and $1.99 for spot; March, $1.93 and $2.18 respectively; April, $1.89 and $2.05; May, $1.98 and $2.05; June, $2.00 and $2.11; July, $1.90 and $2.03; August, $2.04 and $2.16; September, $2.06 and $2.17; October, $2.03 and $2.16; November, $2.04 and $2.12; December, $2.04 and $2.22; making an average for the year of $1.98 for futures and $2.20 for spot.

Sulphate of ammonia production and consumption have increased and quotations in New York were for imported, $3.025 to $3.30; domestic, $3.00 to $3.15 for futures, and "spot" at about 5 cents increase.

The following summary from the Engineering and Mining Journal outlines the prices of rock phosphates:

During 1903, the production of all classes of phosphate amounted to 1,477.601 long tons, which is less than the previous year. The following statement shows the production and shipment in the various fields:

	Production.	Shipments.	
		Domestic.	Foreign.
Florida hard rock,	438,759	1,000	466,819
Land pebble,	285,188	149,008	153,563
Peaee river,	49,985	49,985	.....
Total Florida,	773,923	199,993	620,382
Tennessee,	422,889	313,008	117,387
South Carolina,	280,789	218,227	40,929
Total United States,	1,477,601	731,228	778,698

The centralizing of control by purchase of some of the more important hard rock and land pebble mines in Florida has been the most interesting feature of the year.

The prices obtained in 1903 based on monthly averages will be seen from the following table:

	High.	Low.	Year.
Florida hard rock, 78 @ 80 per cent.,*	7.25	6.25	6.95
Florida land pebble, 68 @ 73 per cent.,*	3.69	3.13	3.49
Tennessee export rock, 78 @ 82 per cent.,†	4.13	3.38	3.93
Tennessee domestic rock, 78 per cent.,†	3.88	3.00	3.62
Tennessee, 75 per cent.,†	3.50	2.88	3.30
Tennessee, 73 @ 74 per cent.,†	3.08	2.35	2.85
Tennessee, 70 @ 72 per cent.,†	2.83	2.18	2.61
South Carolina land rock,‡	3.25	3.25	3.25
South Carolina river rock,‡	2.88	2.88	2.88

*f. o. b., Florida shipping points.
†f. o. b., Mt. Pleasant, Tenn.
‡f. o. b., Ashley River.

Quotations for January and February of this year were for:

Florida hard rock,	77-80 per cent., average		$7 10
Land pebble,	68-73 per cent.,	$3 75 @	4 00
Tennessee,	78-82 per cent.,	4 00 @	4 25
Tennessee,	78 per cent.,	3 75 @	4 00
Tennessee,	75 per cent.,	3 25 @	3 50
Tennessee,	73-74 per cent.,	2 95 @	3 20
South Carolina land rock,		3 25	
South Carolina river rock,		2 75 @	3 00

Raw Materials of Acid Manufacture:—The Engineering and Mining Journal gives the following summary:

Brimstone and Pyrites:—Nearly 60 per cent. of the consumption of sulphur is met by pyrites, the cost of the latter being less than of crude brimstone. The total consumption for the year was brimstone 196,117 long tons; pyrites 616,131 tons. Sicilian brimstone was booked for shipment at an average of $22.75 in January and $21.75 in June, with an average for the year of $22.25 for best unmixed seconds.

Best thirds sold in New York at an average of $20.75 in January and in November at $21.50, making $21.20 for the year.

A decrease in the demand for pyrites affected prices somewhat. Spanish pyrites containing from 43 to 51 per cent. sulphur sold at 10 @ 13.5 cents per unit for lump and 9 @ 11.5 cents for fine. Domestic ore containing 42 to 44 per cent. sulphur brought an average of $5.00 per ton for lump and 10 cents per unit for fines f. o. b. Atlantic coast mines.

Sulphuric Acid:—Contract deliveries in 1903-4 in New York and vicinity have been quoted on the basis of $1.05 per 100 lbs. for 60 degree acid in carboys and $18.00 to $20.00 per ton in bulk; 66 degree acid $1.20 per 100 lbs. in carboys and $21.00 @ $23.00 per ton in bulk; 50 degree acid $13.50 to $14.50 per ton.

New York wholesale quotations for acid phosphate, per unit of available phosphoric acid, during 1903-4, were 63.75 cents.

Potash Salts:—The reports of the U. S. Bureau of Statistics show the following entries for consumption during the fiscal years 1902 and 1903:

	1902.	1903.
Muriate (pounds),	140,124,418	172,838,780
Kieserit, kainit, etc.,	228,112	247,266

This trade is so managed that, before March 1, nearly all wholesale deliveries of the year are contracted for. The schedule of prices on the basis of large lots sold through brokers and delivered at Boston, New York or Philadelphia, is as follows:

Salt.	February, 1904.	After March 1, 1904.
Muriate, 80 per cent.,	1.8175	1.8475
Sulphate, 48 per cent. potash,	2.095	2.125
Double manure salt, 48-50 per cent.,	1.1025	1.135
Kainit, 12.4 per cent. actual potash,	9.05	9.30
Sylvinit, per unit potassium sulphate,	.39-.40	.....
Manure salt, 20 per cent. potash, per unit,	.62-.65	.....

Composition of Raw Materials.—In order to form a correct idea of the cost per pound of the fertilizer constituents of these materials, it is needful to determine their composition or, in other words, the quantities of valuable constituents each contains. The following table shows the composition of the raw materials used in the manufacture of fertilizers. Very few analyses of these materials, with the exception of ground bone and dissolved rock, have been made in Pennsylvania. The figures in the following table include the averages of the results of analyses made in Connecticut, Massachusetts, New Jersey and Pennsylvania during the past year, except in the case of ground bone and dissolved rock phosphates, where Pennsylvania results alone are included.

Composition of Non-Acidulated Fertilizer Ingredients. (Per cent.)

	Number of samples analyzed.	Nitrogen.	Potash.	Total phosphoric acid.
Sulfate of ammonia,	8	20.64	.....	.....
Nitrate of soda,	19	15.80	.....	.....
Dried blood,	9	10.98	.....	.....
Ground bone,	76	2.67	.....	22.92
Tankage,	18	5.64	.....	14.20
Ground fish,	19	8.00	.....	6.73
Cotton-seed meal,	94	7.06	1.90	3.15
Castor pomace,	3	4.86	1.00	1.90
Sulfate of potash, high grade,	6	.....	49.09	.....
Muriate of potash,	20	.....	50.44	.....
Kainit,	10	.....	12.72	.....
Double sulfate of potash and magnesia,	4	.....	26.98	.....

Composition of Acidulated Fertilizer Ingredients. (Per cent.)

	Number of samples analyzed.	Total phosphoric acid.	Soluble phosphoric acid.	Reverted phosphoric acid.	Insoluble phosphoric acid.
Dissolved bone-black,	3	16.86	12.09	3.21	1.56
Dissolved bone,*	14	16.65	2.78	8.55	5.32
Dissolved rock phosphate,	116	15.41	9.11	4.96	1.34

*Also contains 2.62 per cent. nitrogen.

These figures indicate no great change in the composition of the raw materials used in fertilizer manufacture.

Cost per Pound of Fertilizer Constituents.—With the composition of these raw materials and their price per ton, hundred weight, or other unit of measure as a basis, the wholesale cost per pound of the valuable constituents can be readily calculated. In many cases the ammoniates are quoted "per unit of ammonia," the term unit being equivalent to per cent.; in goods sold by the ton of 2,000 lbs.,

the unit is equal to 20 lbs., and 20 lbs. of ammonia contain 16.47 lbs. of nitrogen.

In the case of refuse bone-black, unacidulated, the mean, 28.25 per cent. of phosphoric acid, is assumed to represent the average material on the market.

Phosphate rock is sold by the ton of 2,240 lbs., and on the basis of the bone phosphate of lime it contains, with drawbacks for injurious constituents. Bone-phosphate of lime contains 45.8 per cent. of phosphoric acid; therefore, each per cent. of bone-phosphate in a long ton is equivalent to 22.4lbs. and contains 10.26 lbs. of phosphoric acid.

In the wholesale trade, dried blood, azotine, concentrated tankage and hoof meals are usually sold on the basis of ammonia, disregarding the phosphoric acid present.

Insoluble phosphoric acid in dissolved rock is likewise omitted from consideration, contracts being based solely upon the "available" phosphoric acid; nor in rock phosphates is any claim made for the small quantities of nitrogen and potash they contain, nor in dissolved bone for the potash present.

Under these conditions, the wholesale cost per pound in New York of the valuable constituents of such materials as furnish but a single fertilizing element, these materials being assumed to be in the state of preparation and in the packing in which the manufacturer purchased them, are given in the following table; also, a figure representing a fair retail price at the factory, the materials having undergone no change in treatment or packing and the allowance for expense and profit in retailing being 20 per cent.

Wholesale Cost Per Pound of Fertilizer Constituents (New York).

I. Ingredients Supplying One Constituent.

Material.	Constituent valued.	Wholesale price—cents.	Wholesale price plus 20 per cent.
Sulfate of ammonia,	Nitrogen,	15.10	18.12
Nitrate of soda,	Nitrogen,	13.80	16.56
Dried blood, high grade,	Nitrogen,	15.58	18.70
Concentrated tankage,	Nitrogen,	13.4	16.08
Refuse bone black,	Phosphoric acid, total,	3.31	3.97
Phosphate rock:*			
Tennessee, 78 per cent.,	Phosphoric acid, total,	.484	.581
South Carolina, 60 per cent.,	Phosphoric acid, total,	.53	.636
Acid phosphate,	Phosphoric acid, available,	3.19	3.83
Double manure salts,	Potash,	4.25	5.10
Sulfate of potash,	Potash,	4.31	5.17
Muriate of potash,	Potash,	3.60	4.32
Kainit,	Potash,	3.26	3.91

*The prices of phosphate rock are f. o. b. at the respective points of shipment, not New York and are taken from the reports of the Engineering and Mining Journal. The prices for potash are taken from the schedule of the syndicate. The prices for concentrated tankage are taken from the reports of Thos. J. White & Co., and those of the remainder from the Oil, Paint and Drug Reporter.

The quotations for bone are given without specific reference to quality, so that it is impossible from these data to fairly apportion their several wholesale values to the nitrogen and phosphoric acid contained in this material. As compared with tankage, the general tendency is to assign a higher commercial rating to the phosphoric acid in bone and to the nitrogen a rating not very different from that given in tankage. The quotations of Thos. J. White & Co. show an average wholesale rate in Baltimore during September, 1903, to March, 1904, for crushed tankage to have been $25.972 per unit of ammonia and $0.10 per unit of bone phosphate of lime. This is equivalent to $3.13 per unit of nitrogen and $0.218 per unit of phosphoric acid. The average composition of the ground bone and bone meal samples analyzed last fall in Pennsylvania was: Phosphoric acid, 22.97 per cent.; nitrogen, 3.21 per cent. The prepared bone contains less fat and moisture and often less nitrogen than the ordinary "rough bone," but these differences tend, in a manner, to neutralize each other.

Assuming for the rough bone quoted in the New York market the same composition as the bone meal sold in Pennsylvania and for the value of the nitrogen $3.13 per unit, the values per pound of the several constituents would be:

Wholesale Cost per Pound of Fertilizer Constitutents, New York.

II. Bone.

Grade.	Constituent valued.	Wholesale price.	Wholesale price plus 20 per cent.
Rough bone,	Nitrogen,	15.65	18.78
	Phosphoric acid,	1.72	2.06
Ground bone,	Nitrogen,	19.52	23.42
	Phosphoric acid,	2.14	2.57

Valuations in Neighboring States.

It is desirable, from all points of view, that the schedules of valuation throughout a district in which similar market conditions prevail, should differ as little as possible. It has been our practice in the past, to conform our schedule to that adopted after very careful cooperative study of market conditions for each year, by the New England States and New Jersey, except where the peculiar conditions of our market have made the valuations diverge too largely from the actual selling prices, as in the case of ground bone and dissolved rock phosphates. The schedules for these States for 1903 and 1904 are as follows:

Trade Values Adopted by the New England States and New Jersey.

	Cents per Pound.		Values in 1904 in per cent. of those of 1903.
	1903.	1904.	
Nitrogen:			
In ammonia salts,	17½	17½	100
In nitrates,	15	16.0	106.6
In dry and fine ground fish,	17	17½	103.0
In meat blood and mixed fertilizers,	17	17½	103.0
In fine ground bone and tankage,	16½	17.0	103.0
In coarse bone and tankage,	12	12½	104.2
Phosphoric acid:			
Water soluble,	4½	4½	100.0
Citrate soluble,	4	4½	112.5
In cotton-seed meal, castor pomace and wood ashes,	4	4.0	100
In dry, fine ground fish, bone and tankage,	4	4.0	100
In coarse fish, bone and tankage,	3	3.0	100
In mixed fertilizers, insoluble,	2	2.0	100
Potash:			
In forms free from muriate (chlorid),	5	5.0	100
As muriate,	4¼	4¼	100

As in past years, because the New England valuations correspond well, as a rule, with the Pennsylvania selling prices for complete fertilizers and dissolved bone, and because they reflect, in the main, the variations in the wholesale prices that have occurred during the past manufacturing season as compared with the season preceding, and also because uniformity of valuation is desirable over the same general territory, the foregoing schedule of the New England States and New Jersey for the year 1904 has been adopted for Pennsylvania with the exception of values for ground bone and dissolved rock.

These fertilizer materials require different valuation in Pennsylvania from that accorded them in the other States just named, in order that selling prices and computed valuations may coincide. The reasons for this fact have been so often discussed in past years, that repetition seems unnecessary at this time.

New York quotations for bone do not reflect precisely Pennsylvania prices; they are nevertheless of value as indicators of relative values of this commodity from season to season. The data compiled from the *Oil, Paint and Drug Reporter* show a strong advance in bone prices during the past season. This corresponds with the advance in other slaughter-house fertilizer products exhibited in both New York and Baltimore quotations. Furthermore, bone retail selling prices during 1903 considerably exceeded the computed valuations. For these reasons, an advance has been made in the schedule of bone values, especially as respects the nitrogen.

Respecting the prices of dissolved phosphate rock, the following facts appear: From 1902 to 1903 there was a heavy advance in the mine prices of the raw rock, a sharp decrease in the value of sulphuric acid, no change in the market quotations for the acid phosphate; the schedule of valuation for these goods was therefore not changed in 1903. During 1903 the retail selling prices advanced

notably, being 12 to 14 per cent. above the computed values. The wholesale market prices for the periods named afford no clear explanation of this advance; for from 1903 to 1904, the mine prices of Charleston rock fell greatly and those for Tennessee rock did not fully maintain the 1902-3 level; sulphuric acid recovered but slightly from the drop of 1902-3, and the acid phosphate wholesale prices show only a trifling advance. The reasons for the increased retail prices of 1903 are evidently to be found in peculiarities in the conditions governing the retail sale of the manufactured product. Owing to the uncertainty respecting the permanance of these sale conditions, the schedule for rock phosphate values for 1904 has been changed but slightly. The change made reflects the slight increase in the wholesale price of acid phosphate and places the value of reverted phosphoric acid in rock goods upon the same basis in relation to that of water-soluble phosphoric acid as has been given to it in the case of acidulated bone goods.

The schedule for 1904 as a whole is as follows:

Schedule of Values for Fertilizer Ingredients, 1904.

	Cents per pound.
Nitrogen:	
In ammonia salts,	17½
In nitrates,	16
In meat, dried blood and mixed fertilizers,	17½
In cotton seed meal and castor pomace,	16½
In fine ground bone and tankage,	13
In coarse bone and tankage,	11
Phosphoric acid:	
Soluble in water, in bone fertilizers,	4½
Soluble in water, in rock fertilizers,	3
Soluble in ammonium citrate, in bone fertilizers,	4½
Soluble in ammonium citrate, in rock fertilizers,	3
Insoluble in ammonium citrate, in bone fertilizers,	2
Insoluble in ammonium citrate, in rock fertilizers,	1½
In fine bone, tankage and fish,	5
In coarse bone and tankage,	2½
In cotton seed meal, castor pomace and wood ashes,	4
Potash:	
In high grade sulphate or in forms free from muriate,	5
As muriate,	4¼

Potash in excess of that equivalent to the chlorin present, will be valued as sulphate, and the remainder as muriate.

Nitrogen in mixed fertilizers will be valued as derived from the best sources of organic nitrogen, unless clear evidence to the contrary is obtained.

Phosphoric acid in mixed fertilizers is valued at bone phosphoric acid prices, unless clearly found to be derived from rock phosphate.

Bone is sifted into two grades of fineness: Fine, less than 1-50 inch in diameter; coarse, over 1-50 inch in diameter.

The result obtained by the use of this schedule does not cover the items of mixing, bagging, freight and agents' commission. To cover these, allowances are made as follows:

For freight, an allowance of $2.00 per ton on all fertilizers.

For bagging, an allowance of $1.00 per ton on all fertilizers, except when sold in original packages.

For mixing, an allowance of $1.00 per ton on complete fertilizers and rock-and-potash goods.

For agents' commission, an allowance of 20 per cent. is added to the cash values of the goods ready for shipment.

The mean quotation on freight from New York, Philadelphia and Baltimore to Harrisburg, in January, 1897, was $1.68 per ton, in lots of twelve tons or over. In May, 1899, quotations by the Pennsylvania Railroad were: From New York, $2.40; from Philadelphia, $1.70; and from Baltimore, $1.55; mean rate from the three points, $1.88.

For the year 1903 and under similar conditions of shipment, quotations by the Pennsylvania Railroad were: From New York, $2.40; from Philadelphia, $1.90, and from Baltimore, Md., $1.75; mean rate from the three points, $2.02.

FERTILIZER ANALYSES, AUGUST 1 TO DECEMBER 31, 1904.

Since August 1, 1904, there have been received from authorized sampling agents eight hundred and twenty-six fertilizer samples, of which four hundred and fifteen were subjected to analysis, the remainder being rejected either because they represented brands analyzed last season, or because they were regarded as not certainly representative of the brand whose name they bore. When two or more samples representing the same brand were received, equal portions from the several samples were united and the composite sample was subjected to analysis.

The samples analyzed group themselves as follows, 256 complete fertilizers, furnishing phosphoric acid, potash and nitrogen; 6 dissolved bones, furnishing phosphoric acid and nitrogen; 68 rock-and-potash fertilizers, furnishing phosphoric acid and potash; 45 acidulated rock phosphates, furnishing phosphoric acid only; 38 ground bones, furnishing phosphoric acid and nitrogen and 2 miscellaneous samples which group includes substances not properly classified under the foregoing heads.

The determinations to which a complete fertilizer is subjected are as follows: (1) Moisture, useful for the comparison of analyses, for indication of dry condition and fitness for drilling, and also of the conditions under which the fertilizer was kept in the warehouse. (2) Phosphoric acid total, that portion soluble in water, and of the residue, that portion not soluble in warm ammonium citrate solution (a solution supposed to represent the action of plant roots upon the fertilizer), which is assumed to have little immediate food value. By difference, it is easy to compute the so-called "reverted" acid, which is the portion insoluble in water but soluble in the citrate. The sum of the soluble and reverted is commonly called the "avail-

able" phosphoric acid. (3) Potash soluble in water,—most of that present in green sand marl and crushed minerals, and even some of that present in vegetable materials such as cotton-seed meal, not being included because insoluble in water even after long boiling. (4) Nitrogen—this element is determined by a method which simply accounts for all present, without distinguishing between the quantities present in the several forms of ammonium salts, nitrates or organic matter. (5) Chlorin; this determination is made to afford a basis for estimating the proportion of the potash that is present as chlorid or muriate, the cheaper source. The computation is made on the assumption that the chlorin present, unless in excess, has been introduced in the form of muriate of potash; but doubtless there are occasional exceptions to this rule. One part of chlorin combines with 1.326 parts of potash to form the pure muriate; knowing the chlorin, it is, therefore, easy to compute the potash equivalent thereto. (7) In the case of ground bone, the state of sub-division is determined by sifting through accurately made sieves; the cost of preparation and especially the promptness of action of bone in the soil depends very largely on the fineness of its particles, the finer being much more quickly useful to the plant.

The law having required the manufacturer to guarantee the amount of certain valuable ingredients present in any brand he may put upon the market, chemical analysis is employed to verify the guaranties stamped upon the fertilizer sacks. It has, therefore, been deemed desirable in this report to enter the guaranty filed by the manufacturer in the office of the Secretary of Agriculture, in such connection with the analytical results that the two may be compared. An unfortunate practice has grown up among manufacturers of so wording the guaranty that it seems to declare the presence in the goods of an amount of a valuable constituent ranging from a certain minimum to a much higher maximum; thus, "Potash, 2 to 4 per cent." is a guaranty not infrequently given. In reality, the sole guaranty is for 2 per cent. The guaranteed amounts given for each brand in the following tables, are copied from the guaranties filed by the maker of the goods with the Secretary of Agriculture, the lowest figure given for any constituent being considered to be the amount guaranteed. For compactness and because no essentially important fact is suppressed thereby, the guaranties for soluble and reverted phosphoric acid have not been given separately, but are combined into a single guaranty for available phosphoric acid; in cases where the maker's guaranty does not specifically mention available phosphoric acid, the sum of the lowest figures given by him for soluble and reverted phosphoric acid is used. The law of 1879 allowed the maker to express his guaranty for nitrogen either in terms of that element or in terms of the ammonia equivalent thereto; since ammonia is composed of three parts of hydrogen and fourteen parts of nitrogen, it is a very simple matter to calculate the amount of one, when the amount of the other is given; the amount of nitrogen multiplied by 1.214 will give the corresponding amount of ammonia, and the amount of ammonia multiplied by 0.824 will give the corresponding amount of nitrogen. In these tables, the expression is in terms of nitrogen.

The law of 1901 abolishes this alternative and requires that the

guaranty shall be given in terms of nitrogen. Many manufacturers after complying with the terms of the law, insert additional items in their guaranties, often with the result of misleading or confusing the buyer; the latter will do well to give heed to those items only that are given as the law requires and that are presented in these tables.

A summary of the analyses made this season may be presented as follows:

Summary of Analyses Made this Season.

	Complete fertilizers.	Rock and potash.	Dissolved bone.	Dissolved rock.	Ground bone.
Number of analysis,	256	68	6	45	38
Moisture, per cent.,	10.10	10.63	6.04	9.68	7.11
Phosphoric acid:					
Total, per cent.,	10.49	11.24	16.55	16.04	23.62
Soluble, per cent.,	4.52	5.60	3.96	9.67	.....
Reverted, per cent.,	4.05	4.55	6.13	4.54	.....
Insoluble, per cent.,	1.92	1.09	6.46	1.83	.....
Potash, per cent.,	2.87	2.76	.....	.....	.....
Nitrogen, per cent.,	1.25	.....	2.52	.....	2.95
Mechanical analysis of bone:					
Fine,	.....	.....	.....	.....	.....
Coarse,	.....	.....	.....	.....	.....
Commercial valuation,	22.53	14.94	27.77	14.13	28.40
Average selling price,	21.82	15.89	24.94	13.89	27.02
Commercial value of samples whose selling price is ascertained,	22.53	14.92	27.77	14.09	27.97

The cases of departure of goods from their guaranteed composition observed this season, including only those cases in which it amounted to two-tenths per cent., or more, were as follows:

Summary of Instances of Deficiency from Guaranty.

	Complete fertilizers.	Rock and potash.	Dissolved bone.	Dissolved rock.	Ground bone.
Deficient in four constitutents,	1	.....	.....	.....	.....
Deficient in three constituents,	9	.....	.....	.....	.....
Deficient in two constituents,	47	5	.....	.....	1
Deficient in one constituent,	69	19	3	5	13
Total samples in which deficiency occurred,...	126	24	3	5	14

The cases of deficiency noted during the past eleven seasons in the goods as compared with their guaranties expressed in percentage of the total number of goods of each class analyzed, are as follows;

Percentage of Deficiency, 1899-1904.

	Spring, 1899.	Fall, 1899.	Spring, 1900.	Fall, 1900.	Spring, 1901.	Fall, 1901.	Spring, 1902.	Fall, 1902.	Spring, 1903.	Fall, 1903.	Spring, 1904.	Fall, 1904.
Complete fertilizers, ...	38.4	33.7	42.0	40.8	31.6	34.6	40.0	36.7	37.5	37.9	39.5	49.2
Dissolved bone, ...	50.0	14.3	*50.0	*50.0	†	40.0	*100.0	50.0	33.3	63.6	‡	50.0
Rock and potash, ...	19.1	34.2	29.2	33.3	31.7	26.2	30.3	43.5	32.9	43.2	50.7	35.3
Dissolved rock, ...	13.8	14.5	5.4	19.4	22.5	8.2	15.2	8.9	23.2	20.0	20.0	11.1
Ground bone, ...	18.4	25.3	26.7	11.8	34.1	18.2	17.2	25.9	23.3	.....	36.3	36.8
All classes except miscellaneous, ...	30.9	29.2	35.2	34.3	30.8	27.6	34.2	33.2	35.1	44.7	39.6	41.4

*Only two samples analyzed.
†Only one sample analyzed.
‡Only two samples analyzed for which no guaranties are recorded.

Marked variations in the general percentage of deficiency occur from year to year. The percentage of deficiency of all classes of fertilizers for this season is about seven per cent. greater than the average for the past eleven seasons. The most marked variation is in case of complete fertilizers where the deficiency is over seven per cent. greater than any heretofore recorded.

Of 126 samples of complete fertilizers in which there was deficiency at some point, there were 41 in which there was not distinct excess above guaranty at some other point.

A comparison of the average composition of all samples of complete fertilizers for which guaranties are recorded with the average of the corresponding guaranties, for several seasons past including those of this season follows:

Average Composition and Guaranty Compared.

	Average composition. Per cent.	Average guaranty. Per cent.
Fall, 1901.		
Phosphoric acid:		
Total,	11.51	9.82
Available,	10.60	8.06
Potash,	2.77	2.66
Nitrogen,	1.39	1.39
Spring, 1902.		
Phosphoric acid:		
Total,	10.80	9.29
Available,	8.25	7.82
Potash,	3.90	3.66
Nitrogen,	1.62	1.68
Fall, 1902.		
Phosphoric acid:		
Total,	12.58	11.40
Available,	9.95	9.29
Potash,	2.69	2.60
Nitrogen,	1.57	1.55
Spring, 1903.		
Phosphoric acid:		
Total,	11.90	10.67
Available,	9.36	8.73
Potash,	3.85	3.63
Nitrogen,	1.58	1.61
Fall, 1903.		
Phosphoric acid:		
Total,	10.76	9.65
Available,	8.84	8.13
Potash,	4.09	3.90
Nitrogen,	1.33	1.29
Spring, 1904.		
Phosphoric acid:		
Total,	10.24	9.32
Available,	8.27	7.87
Potash,	4.09	3.90
Nitrogen,	1.58	1.55
Fall, 1904.		
Phosphoric acid:		
Total,	10.49	9.72
Available,	8.59	7.70
Potash,	2.87	2.81
Nitrogen,	1.25	1.29

It is of interest to note how closely the system of valuations, based upon the wholesale prices of raw materials in the principal markets during the most important buying season and upon certain average allowances for expense and profit on the part of the mixer and jobber, coincides with the retail prices later ascertained. A comparison for several seasons past is given below:

Comparison of Selling Price and Valuation, 1899-1904.

	Selling price.	Valuation.	Excess of valuation over selling price.
Complete fertilizers:			
1899, Spring,	$23.60	$24.70	$1.10
Fall,	22.98	23.42	.44
1900, Spring,	25.38	24.61	—.77
Fall,	23.22	23.84	.62
1901, Spring,	23.92	24.76	.84
Fall,	22.28	23.75	1.47
1902, Spring,	24.10	25.33	1.25
Fall,	21.83	23.31	1.48
1903, Spring,	24.57	24.15	—.42
Fall,	21.98	22.77	.79
1904, Spring,	24.28	24.99	.71
Fall,	21.82	22.53	.71
Dissolved bone:			
1899, Spring,	21.75	21.81	.06
Fall,	19.00	21.12	2.12
1900, Spring,	26.00	30.87	4.87
Fall,	23.50	22.74	—.76
1901, Spring,	28.00	29.00	1.00
Fall,	23.91	23.36	—.55
1902, Spring,	16.50	17.35	.85
Fall,	25.30	27.08	1.78
1903, Spring,	31.17	30.87	—.30
Fall,	23.67	24.57	.90
1904, Spring,	31.50	28.42	—3.08
Fall,	24.94	27.77	2.83
Rock and potash:			
1899, Spring,	16.83	15.16	—1.67
Fall,	17.28	14.53	—2.75
1900, Spring,	17.35	14.71	—2.64
Fall,	18.11	14.63	—3.48
1901, Spring,	16.20	14.60	—1.60
Fall,	16.00	14.23	—1.86
1902, Spring,	16.45	15.05	—1.40
Fall,	15.97	14.46	—1.51
1903, Spring,	17.20	14.74	—2.46
Fall,	15.96	14.86	—1.10
1904, Spring,	16.47	15.46	—1.01
Fall,	15.89	14.92	—.97
Dissolved rock:			
1899, Spring,	13.36	14.03	.67
Fall,	12.64	13.13	.49
1900, Spring,	13.57	13.48	—.09
Fall,	13.96	13.11	—.85
1901, Spring,	13.90	13.51	—.39
Fall,	13.18	13.82	.64
1902, Spring,	13.73	13.49	—.24
Fall,	13.54	13.70	.12
1903, Spring,	15.13	13.34	—1.79
Fall,	14.64	13.12	—1.52
1904, Spring,	14.59	14.05	—.54
Fall,	13.89	14.09	.20
Ground bone:			
1899, Spring,	26.67	28.11	1.44
Fall,	24.98	27.23	2.25
1900, Spring,	28.42	25.91	—2.51
Fall,	28.73	26.87	—1.86
1901, Spring,	27.59	28.71	1.12
Fall,	25.94	27.69	1.75
1902, Spring,	28.52	26.80	—1.72
Fall,	28.09	27.51	—.58
1903, Spring,	28.67	27.25	—1.42
Fall,	27.52	27.07	—.45
1904, Spring,	28.20	27.70	—.50
Fall,	27.02	27.97	.95

The schedule of valuation adopted for use this year has this season, as last spring, except where only a few samples of a class were available for comparison, given valuations which agree fairly well with the average selling price.

The true relation between valuation and selling price can be ascertained only by taking into account the average freight to points of sale from which samples are taken during the season.

COMPLETE

Furnishing Phosphoric Acid,

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Abbott & Martin Rendering Co., Columbus, O.		
1597	New York Special,	Philips & Hunt, Waynesburg,	14.18
	Allegheny City Fertilizer Works, Allegheny, Pa.		
1523	†Banner Phosphate,	Canonsburg Milling Co., Canonsburg,	
1861		Chas. T. Wills & Co., Parnassus,	8.12
1544	Grain and Grass Phosphate,	Chas. T. Wills & Co., Parnassus,	7.08
	American Agricultural Chemical Co., New York, N. Y.		
1566	Corn Fertilizer,	E. B. Kepper, Somerset,	14.00
	Canton Chemical Branch, Baltimore, Md.		
1252	Baker's High Grade Guano,	J. D. Miller, Rockwood,	9.87
1472	Harrow Brand Crop Grower,	D. B. Myers, Gardner's Station,	13.82
	Crocker Branch, Buffalo, N. Y.		
1960	Ammoniated Bone Superphosphate,	I. M. Heyburn, Brandywine Summit,	11.49
1661	New Rival,	H. J. Mitchell & Co., Emlenton,	12.44
1665	†Wheat and Corn Fertilizer,	Jos. Bell, Greenfield,	
1674		C. Fairlamb, Stoneboro,	11.67
	Detrick Branch, Baltimore, Md.		
1547	†Imperial Compound,	Jos. McCully, Mifflintown,	
1288		Levi Berkey, Somerset,	15.03
1575		Glessner & Son, Myersdale,	
1440	Improved No. 1 Compound,	Lewis Barth, Dushore,	13.25
1262	†Kangaroo Komplete Kompound,	Newton Gouder, Boswell,	
1210		Jacob Apple, Posser,	
1196		W. J. Hoover, Port Matilda,	11.18
1293		Elmer Dickey, New Lexington,	
1350		Eli Yost, McEwensville,	
	Lazaretto Branch, Baltimore, Md.		
1255	Lazaretto Crop Grower,	G. Walker, Glade,	12.12
	Michigan Carbon Works Branch, Detriot, Mich.		
1676	Homestead,	Horn & Hoover, Atlantic,	10.04
	Milsom Branch, Buffalo, N. Y.		
1679	†Buffalo Fertilizer,	P. A. McDowell, Atlantic,	
1831		A. L. Stout, Churchville,	12.06
1522	†Erie King,	J. B. Dunlop & Son, Canonsburg,	
1680		A. Bright & Son, Greenville,	5.60
	Moro-Phillips Branch, Philadelphia, Pa.		
1185	C. & G. Complete Fertilizer,	J. H. Weber, Linden Hall,	15.42
1852	Farmer's Mixture,	P. W. Bitner, Pleasant Corners,	8.25
1809	Standard Guano,	Elias Hornberger, Ephrata,	
1424		A. W. Kenyon, Tomkinsville,	11.18
1853		P. W. Bitner, Pleasant Corners,	
	Pacific Guano Branch, New York.		
1332	Pacific A No. 1 Phosphate,	J. W. Showalter, Hartleton,	15.44
	Reese Branch, Baltimore, Md.		
1958	Ammoniated Bone Phosphate Mixture,	Ball & Rhodes, Media,	13.79
1764	†Half and Half,	A. F. Bauer, Windsor Castle,	10.57
1959			
1752	Mayflower,	L. B. Umstead, Birdsboro,	11.20

†Composite sample.

FERTILIZERS.

Potash and Nitrogen.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. ——.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
2.26	7.38	3.11	12.75	.....	9.64	8.00	4.71	.....	*4.71	7.00	*.73	.82	20.42	23.00	1597
														20.00	1533
4.13	2.36	1.34	*8.09	9.00	*6.75	8.00	2.10	.....	2.10	2.00	1.07	.82	18.91	21.00	1861
4.35	2.66	1.10	*8.11	10.00	*7.01	9.00	4.24	.....	4.24	4.00	1.23	.82	22.09	23.00	1544
5.91	3.20	1.45	10.56	.....	9.11	.....	1.94	.....	1.94	.....	1.47	.....	23.01	.....	1566
5.78	2.85	1.02	9.65	9.00	8.63	8.00	2.85	.....	*2.85	3.00	*1.00	2.06	21.33	25.00	1252
1.59	5.14	2.11	*8.84	9.00	*6.73	8.00	1.17	.....	1.17	1.00	.89	.82	17.66	18.00	1472
4.49	5.26	1.62	11.37	11.00	9.75	9.00	2.26	.....	2.26	2.00	*2.12	2.47	26.82	.....	1960
5.65	4.83	1.28	11.76	11.00	10.48	9.00	2.45	.....	2.45	2.00	*1.10	1.24	23.47	23.00	1661
														22.00	1665
5.01	3.52	2.65	11.18	9.00	8.53	8.00	1.89	.....	1.89	1.50	*1.49	2.06	23.16	20.00	1674
														18.00	1547
5.88	2.81	1.43	10.12	9.00	8.69	8.00	2.14	.....	2.14	2.00	.97	.82	20.66	18.00	1288
														22.00	1575
7.08	2.39	1.24	10.71	9.00	9.47	8.00	2.10	.....	2.10	2.00	1.00	.82	21.56	21 25	1440
														.....	1262
														25.00	1210
4.06	3.20	2.83	10.09	9.00	*7.26	8.00	3.20	.....	3.20	3.00	1.69	1.65	24 01	25.00	1196
														22.50	1293
														21.50	1350
6.76	2.61	2.03	11.40	9.00	9.37	8.00	2.08	.....	2.08	2.00	1.77	1.65	24.99	21.50	1255
6.09	2.61	1.25	9.95	9.00	8.70	8.00	1.62	.....	1.62	1.50	2.06	2.06	24.64	24.00	1676
														23.00	1670
5.02	4.04	1.66	10.72	9.00	9.06	8.00	1.95	.....	1.95	1.50	*1.39	2.06	22.84	25.00	1831
														21.00	1522
2.36	5.41	1.87	9.64	8.00	7.77	7.00	1.36	.....	1.36	1.00	.94	.82	19.06	21.00	1680
5.82	2.88	1.16	9.86	9.00	8.70	8.00	2.09	.....	2.09	2.00	.92	.82	20.28	21.00	1185
2.62	4.20	1.74	8.56	7.00	6.82	6.00	4.96	.....	*4.96	5.00	*1.13	1.24	22.47	20.00	1852
														19.00	1809
6.22	2.31	1.19	9.72	9.00	8.53	8.00	4.08	.....	4.08	4.00	*.79	.82	21.70	24.00	1424
														19.00	1853
1.94	4.94	1.61	8.49	8.00	*6.88	7.00	1.14	.....	1.14	1.00	.98	.82	18.01	20.00	1332
6.92	2.71	1.25	10.88	10.00	9.63	9.00	3.15	.....	3.15	3.00	.85	.82	22.22	23.00	1958
3.23	3.95	1.50	8.68	8.00	7.18	7.00	1.29	.....	1.29	1.00	.89	.82	18.02	15.00	1764
														18.00	1959
5.74	3.01	1.66	10.41	9.00	8.75	8.00	2.32	.....	2.32	2.00	*1.58	1.65	23.72	22.00	1752

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Sharpless & Carpenter Branch, Philadelphia, Pa.		
1396	†Dissolved Bone Phosphate for Potatoes	Hobensack Bros., Ivyland,	
1647	and General Use.	Benj. F. Shearer, Dublin,	12.10
1429		E. E. Sherman & Co., Ulster,	
1212	†No. 2 for Grain and Grass,	H. H. Erdman, Quakertown,	10.55
1503		L. A. Geiger, Joanna,	
1430	Royal Spring Mixture,	E. E. Sherman & Co., Ulster,	8.46
	Susquehanna Branch, Baltimore, Md.		
1474		Z. J. Peters, Guernsey,	
1954	†Ammoniated Bone Phosphate,	R. A. Richards & Co., Mendenhall,	11.34
1702	Susquehanna Bone Phosphate,	Miller & Kuntz, Mechanicsburg,	14.28
	Tygert-Allen Branch, Philadelphia, Pa.		
1653		Jos. Wolfe, Kreidersville,	
1893	†Allen's Special Wheat and Grass,	John F. Heagy, New Providence,	12.25
1833	Star Bone Phosphate,	J. A. Danenhower, Southampton,	11.13
	Williams & Clark Branch, New York.		
1610	Americus Ammoniated Dissolved Bone,	Iden Vail, New Salem,	13.9
1331		B. F. Hoffmaster, Hartleton,	
1175	†Royal Bone Phosphate,	H. T. Beatty, Saltsburg,	11.68
1685		C. W. Smith, Smith's Corner's,	
	Zell Guano Branch, Baltimore, Md.		
1488		O. F. Arnold, Clear Spring,	
1555	†Economizer Phosphate,	W. V. Shirk, Oakland Mills,	14.02
1454	Hustler Phosphate,	O. F. Arnold, Clear Spring,	14.71
1579		Shell Hdw. Co., Connellsville,	
1455	†Little Giant,	O. F. Arnold, Clear Spring,	12.89
1775		R. W. McCormick & Son, Lock Haven	
	American Reduction Co., Pittsburg, Pa.		
1525		J. A. Denny, Canonsburg,	
1539	†Common Sense,	W. M. Tyson, Darlington,	4.63
	Armour Fertilizer Works, Chicago, Ill.		
1246		A. H. Walker, Burgettstown,	
1165	†Grain Grower,	Frank Douglass, Indiana,	9.08
1481		L. Alleman Hdw. Co., Gettysburg,	
1946	No. 1 Bone Phosphate,	Dewees & Bracken, Paoli,	9.09
1277		S. P. Geisel, Hooversville,	
1258		Cook & Beerits, Somerset,	
1203	†Royal Ammoniated Bone,	Levin A. Lerch, Bethlehem,	8.84
1318		M. P. Yoder, Belleville,	
1362		J. L. Reese & Co., Millville,	
1366		E. W. Michael, Hughesville,	
1256		Cook & Beerits, Somerset,	
1200	†Wheat, Corn and Oats Special,	McCalmont & Co., Bellefonte,	8.60
1276		S. P. Geisel, Hooversville,	
1461	Wheat, Corn and Grass Special,	Cook, Deardorf & Co., Dillsburg,	8.14
1217		M. P. Yoder, Belleville,	
1204	†Wheat Special,	Levin A. Lerch, Bethlehem,	8.64
1363		J. L. Reese & Co., Millsville,	
	R. S. Aucker, Shamokin, Pa.		
1789	Grade E, Bone and Slaughter House Phos.,	Geo. R. Hendricks, Selinsgrove,	7.08
	Baltimore Fertilizer Co., Baltimore, Md.		
1496	Homestead for General Use,	P. E. Comfort, Bermudian,	9.00

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. ——)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
5.61	3.08	1.82	10.51	9.00	8.69	8.00	5.81	.....	*5.81	6.00	*1.94	2.06	28.77	27.00	1396
														29.00	1647
5.71	2.97	1.21	8.89	8.00	7.68	7.00	1.42	.....	1.42	1.00	.90	.82	18.50	18.00	1429
														.....	1212
														18.00	1503
6.37	2.80	1.16	10.33	9.00	9.17	8.00	2.33	.....	2.33	2.00	1.06	.82	21.70	20.00	1430
4.97	3.31	1.71	9.99	9.00	8.28	8.00	2.12	.....	2.12	2.00	1.66	1.65	23.26	23.00	1474
														23.00	1954
4.76	2.90	1.21	*8.87	9.00	*7.66	8.00	2.16	.....	2.16	2.00	*1.49	1.65	21.74	21.50	1702
														20.00	1653
2.49	4.71	1.68	8.88	8.00	7.20	7.00	1.12	.....	1.12	1.00	.84	.82	17.70	18.00	1893
5.23	3.51	1.53	10.27	9.00	8.74	8.00	3.26	.....	3.26	3.00	2.08	2.06	26.71	25.00	1833
4.61	3.78	1.96	10.35	9.00	8.39	8.00	3.07	.....	3.07	2.00	*1.31	1.65	22.98	22.00	1610
														20.75	1331
4.71	3.89	1.59	10.19	9.00	8.60	8.00	1.93	.....	*1.93	2.00	1.03	1.03	20.86	25.00	1175
														22.00	1685
5.04	3.02	1.34	9.40	9.00	8.06	8.00	2.29	.....	2.29	2.00	.94	.82	20.10	18.50	1488
														17.00	1555
5.49	3.73	1.16	10.38	10.00	9.22	9.00	3.00	.....	3.00	3.00	.92	.82	21.79	20.00	1454
														20.00	1579
4.57	2.58	1.84	8.99	8.00	7.15	7.00	1.23	.....	1.23	1.00	.96	.82	18.28	17.50	1455
														21.00	1775
3.57	2.96	1.68	8.21	7.00	6.53	6.00	.83	.....	*.83	1.00	1.77	1.65	20.47	18.00	1525
														20.00	1539
5.69	3.11	2.20	11.00	10.00	8.80	8.00	2.25	.....	2.25	2.00	*1.53	1.65	23.77	23.00	1246
														25.00	1165
														22.00	1481
6.53	2.32	1.52	10.37	.....	8.85	.....	2.32	.....	2.32	.....	1.45	.....	23.13	23.00	1946
6.73	2.25	1.02	10.00	10.00	8.98	8.00	4.02	.....	4.02	4.00	.99	.82	22.89	24.00	1277
														.....	1258
														18.00	1203
														20.00	1318
														19.00	1362
														20.00	1366
4.62	2.84	1.66	9.12	9.00	7.46	7.00	1.44	.....	1.44	1.00	.84	.82	18.30	20.00	1256
														20.00	1200
														21.00	1276
5.16	2.62	1.23	9.01	8.00	7.78	7.00	5.03	.....	5.03	5.00	.84	.82	22.10	19.50	1461
6.01	2.32	1.06	*9.39	10.00	8.33	8.00	2.17	.....	2.17	2.00	*.80	.82	19.48	18.75	1317
														16.00	1204
														17.00	1363
4.14	4.07	1.34	*9.55	10.24	*8.21	8.73	2.70	.....	*2.70	2.72	*.55	.65	15.87	19.00	1789
2.68	5.08	1.97	9.73	.....	*7.76	8.00	2.51	.....	2.52	2.00	1.40	1.24	22.20	18.50	1496

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Baltimore Pulverizing Co., Baltimore, Md.		
1301	†Farmers' Favorite Fertilizer,	Edgar From, McAlevy's Fort,	7.31
1581		J. H. Prinkey, Mill Run,	
1300	High Grade Wheat Compound,	Edgar From, McAlevy's Fort,	8.12
1299	Special Guano No. 1 (Penniman's),	Edgar From, McAlevy's Fort,	8.58
	Baugh & Sons Co., Philadelphia, Pa.		
1409	†Animal Bone and Potash Compound for all crops.	N. J. Hoffman, Geistown,	11.48
1395		Hobensack Bros., Ivyland,	
1919		J. A. Morrow, Newtown Square,	
1462	†Excelsior Superphosphate,	Cook, Deardorff & Co., Dillsburg,	8.21
1281		C. H. Smucker, Friedens,	
1572		Wm. Tayman, Lavansville,	
1274	†Export Bone with Potash,	P. J. Blough, Hooversville,	6.37
1159		D. W. Davis, Ebensburg,	
1571		Wm. Tayman, Lavansville,	
1821	Potato and Truck Special for all Truck Crops.	Jos. L. Fabian, Tullytown,	9.83
1282	Raw Bone Superphosphate,	C. H. Smucker, Friendens,	7.85
1273	Special Fertilizer for Wheat and Grass,	P. J. Blough, Hooversville,	9.13
1360	†Wheat Fertilizer for Wheat and Grass,	W. M. Eves & Sons, Millville,	10.58
1278		C. H. Smucker, Frieden's,	
1183		F. W. Archey, Penn'a Furnace,	
1160		D. W. Davis, Ebensburg,	
1378		F. D. Hartzel's Sons, Chalfont,	
1408		N. J. Hoffman, Geistown,	
1497		J. M. Jackson, Joanna,	
	Wm. F. Baughman, Rinely, Pa.		
1727	Ammoniated Bone Phosphate,	W. L. Mitzel, Red Lion,	8.54
1728	Harvest Queen,	W. L. Mitzel, Red Lion,	9.09
	The Berg Co., Philadelphia, Pa.		
1211	Pure Dissolved Bone and Potash for Wheat and Grass.	Thos. Hackman, Coopersburg,	7.75
1505	†$25 Special Bone Manure,	Jas. S. Heffner, Kurtztown,	7.58
1368		E. W. Michael, Hughesville,	
1760		Jno. W. Goheen, Birdsboro,	
1216	$25 Special Bone Manure,	Geo. W. Arney, Richlandtown,	8.81
	A. H. Blaker, Fox Chase, Pa.		
1383	Special Fertilizer for General Use,	Levi Garner, Doylestown,	11.06
1384	Wheat and Grass Fertilizer,	Levi Garner, Doylestown,	7.89
	D. Blocher & Co., Baltimore, Md.		
1476	Dissolved Raw Bone and Potash,	Ira Keller, Arendtsville,	9.76
1475	High Grade Superphosphate of Bone,	Ira Keller, Arendtsville,	10.02
	Bowker Fertilizer Co., Boston, Mass.		
1240	†Sure Crop Phosphate,	B. F. McClure & Bro., Burgettstown	14.08
1209		Levin A. Lerch, Bethlehem,	
1344		Peter Hause, New Columbia,	
1410		Abram Hostetler, Scalp Level,	
	Bradley & Green Fertilizer Co., Philadelphia, Pa.		
1393	Standard Bone Phosphate for Corn, Wheat and Grass.	H. Doyle, Roxborough,	12.41
	Brillinger & Swartz, Emigsville, Pa.		
1742	Standard High Grade Phosphate,	Brillinger & Swartz, Emigsville,	9.12
	William Brown, Philadelphia, Pa.		
1836	Sterling 10 per cent. Guano,	Geo. Heller, Bustleton,	17.20

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. ——.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
1.63	4.69	1.63	7.95	.....	6.32	.....	1.53	.....	1.53	.....	.93	.....	17.61	.....	1301
4.31	4.20	1.17	9.68	.....	8.51	.....	2.37	.....	2.37	.....	1.72	.....	23.70	19.10	1581
2.41	5.56	1.24	9.21	.....	7.97	.....	1.51	.....	1.51	.....	.73	.....	18.28	.....	1300
														.....	1299
5.96	2.94	1.70	10.60	.....	8.90	8.00	2.26	.....	2.26	2.00	1.73	1.65	24.49	.....	1409
														23.00	1395
														22.00	1919
5.21	3.45	1.83	10.49	.....	8.66	8.00	4.32	.....	4.32	4.00	1.15	.82	23.86	19.50	1462
														23.00	1281
														20.00	1572
.29	4.95	8.99	14.23	‡	5.24	.....	2.20	.....	2.29	2.00	2.14	1.65	25.78	27.00	1274
														26.50	1159
														26.00	1571
5.01	3.24	1.84	10.09	.....	8.25	7.00	1.20	5.88	7.08	7.00	*2.65	2.88	33.64	25.00	1821
5.62	3.11	1.33	10.06	.....	8.73	8.00	1.53	.....	1.53	1.00	1.79	1.65	23.59	23.50	1282
6.09	2.86	1.36	10.31	.....	8.95	.....	2.22	.....	2.22	.....	1.70	.....	24.10	25.00	1273
														22.00	1360
														22.00	1278
														22.00	1183
6.20	2.49	1.70	10.39	.....	8.69	8.00	2.43	.....	2.43	2.00	1.82	1.65	24.67	22.00	1160
														22.00	1378
														.....	1408
														22.00	1497
.88	6.21	2.60	*9.69	10.00	*7.09	9.00	2.66	.....	2.66	2.00	*.78	1.24	19.38	19.00	1727
.91	8.18	2.46	11.55	9.50	9.09	8.00	1.10	.....	*1.10	2.00	.83	.82	20.11	17.00	1728
5.45	3.33	2.51	11.29	.....	*8.78	9.00	3.64	.....	*3.64	5.00	*1.75	2.47	26.19	.....	1211
														24.00	1505
5.63	3.07	2.91	11.61	.....	8.70	7.00	2.92	.....	*2.92	4.00	*1.41	1.65	24.04	25.00	1368
														24.00	1760
6.26	3.16	3.38	12.80	.....	9.42	7.00	2.53	.....	*2.53	4.00	*1.32	1.65	24.26	25.00	1216
5.32	3.45	.98	9.75	9.00	8.77	8.00	2.33	.....	2.33	2.00	*.97	1.02	20.73	24.00	1383
4.36	3.10	.54	*8.00	9.00	*7.46	8.00	4.22	.....	4.22	4.00	*.99	2.46	21.14	20.00	1384
8.50	2.22	1.50	12.22	12.00	10.72	10.00	2.29	.....	*2.29	2.50	*1.76	2.06	26.38	22.00	1476
9.06	1.07	1.89	12.02	12.00	10.13	10.00	1.99	.....	1.99	1.50	*1.03	1.24	22.69	20.00	1475
5.69	3.75	1.64	11.08	10.00	9.44	9.00	2.14	.....	2.14	2.00	.98	.82	21.80	26.00	1240
														20.00	1209
														19.00	1344
														.....	1410
4.61	2.25	1.83	*8.74	10.00	*6.36	8.00	3.60	.....	3.60	3.00	2.04	2.00	25.00	24.00	1393
.92	6.48	2.63	10.03	.....	*7.40	8.00	2.39	.....	*2.39	5.00	.1.16	1.24	20.95	21.00	1742
2.98	3.37	2.28	8.63	.....	6.35	.....	5.91	.....	5.91	.....	3.44	.....	32.89	45.00	1836

*Constituent falls below guaranty.
‡Guaranteed 11 per cent. insoluble phosphoric acid.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Cambria Fertilizer Co., Johnstown, Pa.		
1269	†B. & B. Phosphate,	T. E. Crissman, Windber,	9.36
1153		Wallace Sherbine, Wilmore,	
1280		C. H. Smucker, Friedens,	
	E. Frank Coe Co., New York, N. Y.		
1377	Empire State Brand No. 1,	Wm. E. Richardson, Chalfont,	7.38
	Henry Cope & Co., Lincoln University, Pa.		
1911	Pure Bone Phosphate,	Henry Cope & Co., Oxford,	7.41
1912	Queen of Elk Valley Phosphate,	Henry Cope & Co., Oxford,	5.23
	Josiah Cope & Co., Lincoln University, Pa.		
1906	Pure Bone Phosphate,	Josiah Cope & Co., Oxford,	10.03
1550	†Wheat and Grass Special,	Mr. Martin, Mexico,	13.34
1923		Chas. A. Sell, Bryn Mar,	
	Chicago Fertilizer Co., Chicago, Ill.		
1689	Bone, Blood and Potash,	H. J. Onspough, Onspough,	9.50
1675	Corn and Wheat Special,	E. E. Ruhlman, Stone Borough,	8.88
1690	Potash Special,	H. J. Onspough, Onspough,	12.50
	W. M. Cronister, Philipsburg, Pa.		
1197	Ammoniated Bone Fertilizer,	W. M. Cronister, Philipsburg,	15.80
	J. Scott Dickey, Lancaster, Pa.		
1815	Eagle Brand,	J. D. Sellers, Ephrata,	9.08
1816	J. S. D. Brand,	J. D. Sellers, Ephrata,	11.76
1819	Pulverized Tobacco Stem Fertilizer,	Henry Hess, Lititz,	8.55
1817	Rieker Brand,	J. D. Sellers, Ephrata,	6.99
	Jas. G. Downward & Co., Coatesville, Pa.		
1756	†Royal Bone Phosphate,	C. H. Hine, Douglassville,	8.68
1966		Geo. W. Niblock, Ambler,	
1967	Special Bone Fertilizer,	Geo. W. Niblock, Ambler,	8.04
1920	Special Mixture,	Vincent Litzenberg, Media,	7.30
1757	Special Potash and Tobacco Fertilizer,	C. H. Hine, Douglassville,	9.89
1823	Special Wheat and Grass Fertilizer,	Chas. Satterthwaite, Fallsington,	7.58
	Eureka Fertilizer Co., Perryville, Md.		
1267	†Corn and Potato Special,	N. D. Shaffer, Holsopple,	10.73
1230		S. G. Matchett, Clinton,	
1743		Brillinger & Swartz, Emigsville,	
1346	†Farmer's Favorite,	W. A. Fisher, New Columbia,	9.13
1556		D. B. Dumm, Thompsontown,	
1226		S. G. Matchett, Clinton,	
1591		J. H. Bell, Jefferson,	
1602		W. M. Davis, Greensborough,	
1229	†Farmer's Favorite Bone Phosphate,	S. G. Matchett, Clinton,	8.39
1162		G. J. Jones, Ebensburg,	
1726		W. L. Mitzel, Red Lion,	
1737	Fish, Rock and Potash,	C. T. Grove, Felton,	9.38
1554	†Grain and Grass Mixture,	Louis Arnold, Pfoutz Valley,	9.34
1227		S. G. Matchett, Clinton,	
1592		J. H. Bell, Jefferson,	
1605		W. M. Davis, Greensborough,	
	Farmers' Fertilizer Co., Westminster, Md.		
1494	No. 1 Bone Phosphate,	D. E. Brown, East Berlin,	8.80
1495	XX Bone Phosphate,	D. E. Brown, East Berlin,	8.77
	Farmers' Fertilizer Co., York, Pa.		
1725	Monarch Fertilizer,	Strayer Bro. & Co., York,	7.93

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. ——.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
3.68	3.54	1.98	9.20	8.00	7.22	6.50	1.88	.....	*1.88	2.00	1.35	1.00	20.79	22.00	1269
														20.00	1153
														.....	1280
6.45	2.59	2.05	11.09	10.50	9.04	8.00	.80	3.10	*3.90	4.00	1.08	1.65	26.84	24.00	1377
3.86	8.90	1.39	14.15	11.18	12.76	9.18	2.16	.....	2.16	2.00	*1.56	1.65	27.56	25.00	1911
3.02	3.82	2.22	9.06	8.00	*6.84	7.00	7.68	.....	8.68	8.60	*1.57	1.65	28.26	27.00	1912
8.40	3.39	2.04	13.83	13.00	11.79	9.00	3.99	.....	*3.99	4.00	1.90	1.85	30.19	25.00	1906
														17.00	1550
4.55	3.70	1.34	9.59	.....	8.25	8.00	1.26	.....	1.26	1.00	.98	.82	19.44	22.00	1923
1.78	6.99	2.23	11.00	.....	8.77	8.00	1.83	.....	*1.83	2.00	*.91	1.23	20.62	23 00	1689
.89	8.62	3.49	13.00	.....	9.51	7.00	.....	.86	*.86	1.00	*.59	.82	16.04	.....	1675
2.95	6.29	2.79	12.03	.....	9.24	8.00	3.79	.....	*3.79	4.00	.90	.82	23.40	23.00	1690
4.94	4.05	2.04	11.03	11.00	*8.99	10.00	3.12	.....	3.12	2.00	1.00	.82	22.48	20.00	1197
3.64	4.37	2.11	10.12	.....	8.01	8.00	5.33	.....	5.33	4.00	*.81	.82	22.88	19.00	1815
4.80	5.20	1.98	11.98	.....	10.30	8.60	2.21	.....	2.21	2.00	.91	.82	22.18	16.00	1816
3.48	3.71	2.51	9.70	.....	7.19	7.00	2.70	.....	*2.70	3.00	*1.11	1.24	20.76	20.00	1819
2.96	3.89	2.14	8.99	.....	*6.85	10.00	6.63	.....	6.63	5.00	*.82	1.65	22.98	22.00	1817
4.17	3.54	1.47	9.18	9.00	*7.71	8.60	2.81	.....	2.81	2.00	1.00	.82	20.53	20.00	1756
5.10	3.06	1.88	10.04	9.00	8.16	7.00	2.78	.....	2.78	2.50	*1.20	1.24	22.02	28.00	1966
2.82	8.84	2.55	14.21	7.00	11.66	6.00	2.25	.....	2.25	1.00	.51	.41	18.10	28.00	1967
4.53	2.87	.96	8.36	.....	7.40	.....	4.80	.....	4.80	.....	1.54	.....	24.27	23.00	1920
5.81	2.44	.83	9.08	8.00	8.25	7.00	3.51	.....	3.51	3.00	*1.51	1.65	23.60	28.00	1757
														.....	1823
3.12	5.62	2.16	*10.90	11.00	*8.74	9.00	1.99	.....	*1.99	3.00	.87	.82	20.50	27.50	1267
														19.50	1230
														18.00	1743
														19.00	1346
														18.00	1556
3.42	7.94	.29	*11.65	12.00	11.36	8.00	1.46	.....	*1.46	2.00	*1.42	1.65	24.16	20.00	1226
														22.00	1591
														24.00	1602
														.....	1229
2.13	6.44	2.80	*11.37	12.00	8.57	8.00	1.42	.....	*1.42	2.00	*1.37	1.65	22.00	13.00	1162
														20.00	1726
.96	7.60	2.64	11.20	9.00	8.56	8.00	2.53	.....	2.53	1.00	.74	.41	20.67	17.00	1737
														18.00	1554
.96	7.39	2.67	11.02	10.00	8.35	8.00	1.66	.....	*1.66	2.00	.94	.82	20.37	18.00	1227
														20.00	1592
														22.00	1605
5.85	3.08	1.09	*10.02	11.00	*8.93	9.00	2.90	.....	2.90	2 50	*1.97	2.06	25.71	24.00	1494
6.64	2.93	.77	10.34	10.00	9.57	9.00	3.08	.....	3.08	3.00	.85	.82	21.88	19.00	1495
1.57	5.37	1.09	8.03	.....	*6.94	8.00	2.50	.....	*2.50	5.00	*1.00	1.65	19.20	20.00	1725

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	W. S. Farmer & Co., Baltimore, Md.		
1444	†Harvest Queen Phosphate,	T. S. Manley & Son, East Canton,	14.54
1792	†Harvest Queen Phosphate,	Harrison Moyer, Middleburgh,	
1443	Standard Phosphate,	T. S. Manley & Son, East Canton,	13.28
	Mahlon Fretz, Sellersville, Pa.		
1639	Standard Bone Phosphate,	Mahlon Fretz, Sellersville,	5.93
	Griffith & Boyd, Baltimore, Md.		
1406	Ammoniated Bone Phosphate,	Varner & Ickes, Elton,	9.95
1405	†Cereal Bone Plant Food,	Varner & Ickes, Elton,	10.86
1287	†Cereal Bone Plant Food,	Levi Berkey, Somerset,	
1414	†Cereal Bone Plant Food,	E. S. Gramling, South Fork,	
1478	†Cereal Bone Plant Food,	H. J. Van Dyke, Gettysburg,	
1840	†Farmers' Improved Phosphate,	M. J. Burkholder, Manheim,	12.12
1892	†Farmers' Improved Phosphate,	E. G. Book, Refton,	
1339	†Harvest Queen Phosphate,	Wm. Kline, Lewisburg,	11.11
1540	†Harvest Queen Phosphate,	W. H. Kauffman, Mexico,	
1734	†Royal Potash Guano,	J. C. Leib & Co., Stewartstown,	10.76
1237	†Royal Potash Guano,	Wm. H. Heckert, Bakerstown,	
1874	†Royal Potash Guano,	L. & F. Hoburg, Sharpsburg,	
1733	†Special Guano,	J. C. Leib & Co., Stewartstown,	11.33
1797	†Special Guano,	Peter B. Hess, Lititz,	
1796	Stable Manure Substitute,	Peter B. Hess, Lititz,	6.89
	H. F. Hager, Quakertown, Pa.		
1214	Ammoniated Super Phosphate,	H. F. Hager, Quakertown,	8.06
1213	Farmers' Favorite Phosphate,	H. F. Hager, Quakertown,	7.69
1215	Panic Phosphate,	H. F. Hager, Quakertown,	8.78
	Frank Hartranft, Coatesville, Pa.		
1931	Ammoniated Bone Phosphate,	John Mercer, Downingtown,	7.65
1930	Special Phosphate,	John Young, Downingtown,	6.33
	S. M. Hess & Bro., Philadelphia, Pa.		
1433	†Ammoniated Bone Superphosphate,	L. O. Gavette, E. Smithfield,	10.69
1492	†Ammoniated Bone Superphosphate,	Cornelius Murray, Franklintown,	
1253	Keystone Bone Phosphate,	Jacob Snyder, Rockwood,	15.75
1354	†Wheat and Grass Manure,	John Kramer, Jerseytown,	13.50
1283	†Wheat and Grass Manure,	W. K. Walker, Listie,	
1498	†Wheat and Grass Manure,	A. K. Stulfus, Joanna,	
	F. Houston, Ambler, Pa.		
1640	General Crop Phosphate,	E. R. Umsted, Dublin,	8.89
	Hubbard Fertilizer Co., Baltimore, Md.		
1347	†Columbia Gem Phosphate,	W. F. Slagle, Bloomsburg,	11.32
1721	†Columbia Gem Phosphate,	C. S. Grove, Greencastle,	
1776	I. X. L. Superphosphate,	Joseph Long, Flemington,	10.78
1340	Oriental Phosphate for Wheat and Grass,	Geo. Walter, Montandon,	16.69
1446	Farmers' I. X. L. Superphosphate,	T. S. Green, Canton,	14.11
1348	†Wheat Growers Jewel,	W. F. Slogle, Bloomsburg,	10.96
1774	†Wheat Growers Jewel,	A. R. Gilmore, Linden,	
	M. P. Hubbard & Co., Baltimore, Md.		
1490	†Farmers' Old Economy Phosphate,	E. A. Keesey, Dover,	7.39
1304	†Farmers' Old Economy Phosphate,	E. M. Swope, Petersburg,	
1768	†Farmers' Old Economy Phosphate,	M. Gillis, Hughesville,	
1787	†Farmers' Old Economy Phosphate,	Bogar & Bingaman, Port Treverton,	
1372	†Fish, Bone and Potash,	M. Gillis, Hughesville,	5.36
1308	†Fish, Bone and Potash,	E. M. Swope, Petersburg,	
1791	†Fish, Bone and Potash,	Kramer & Erdly, Kramers,	
1305	†Harvest King for Wheat and Grass,	E. M. Swope, Petersburg,	8.36
1491	†Harvest King for Wheat and Grass,	E. A. Keesey, Dover,	
1296	Old Economy Phosphate,	Q. A. Baker, Bakersville,	8.29

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. ——.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
														19.00	1444
4.88	4.07	1.80	10.75	10.50	*8.95	9.00	2.96	.....	*2.96	3.00	1.15	1.03	22.78	.....	1792
6.36	4.02	1.25	11.63	11.50	10.38	10.00	2.52	.....	2.52	2.50	2.18	2.17	28.04	22.00	1443
1.59	5.42	1.93	8.94	8.00	7.01	7.00	1.01	.....	1.01	1.00	*.97	1.00	17.91	22.80	1639
3.10	7.73	1.08	11.91	9.00	10.83	8.00	2.08	.....	2.08	2.00	*1.01	1.65	22.98	26.00	1406
														24.00	1405
5.63	2.84	1.62	10.09	9.00	8.47	8.00	2.26	.....	2.26	2.00	.83	.82	20.23	18.00	1787
														24.00	1414
														20.00	1478
														20.00	1840
4.79	2.59	1.53	8.82	8.00	7.29	7.00	1.86	.....	1.86	1.50	*.73	.82	18.04	19.00	1892
														19.00	1389
7.31	2.50	1.75	11.56	10.00	9.81	9.00	2.75	.....	*2.75	3.00	*.91	1.03	22.41	19.50	1549
														19.00	1734
6.20	2.70	2.07	10.97	9.00	8.90	8.00	3.65	.....	*3.65	4.00	*.73	.82	21.87	24.00	1237
														22.50	1874
														24.00	1733
7.56	2.86	1.57	11.99	10.00	10.42	9.00	4.41	.....	*4.41	5.00	*1.45	1.86	27.00	26.00	1897
4.03	2.10	1.47	7.60	6.00	6.13	5.00	6.47	.....	6.47	4.00	*2.42	2.90	28.40	26.50	1796
6.66	3.30	1.31	11.27	.....	9.96	8.00	5.75	.....	5.75	4.50	*2.26	2.47	21.10	28.50	1214
6.28	3.14	1.69	11.11	.....	9.42	8.00	3.23	.....	3.23	2.00	1.44	1.24	24.79	22.00	1213
7.06	3.51	1.25	11.82	.....	10.57	8.00	1.94	.....	1.94	1.00	1.07	.82	22.81	19.00	1215
6.74	3.82	2.17	*12.73	15.00	10.56	10.00	2.33	.....	2.33	1.50	*1.56	2.06	25.81	.....	1931
4.33	4.70	1.23	*10.26	15.00	*9.03	14.00	2.98	.....	2.98	2.50	*.81	.82	21.18	.....	1930
														24.00	1433
5.88	2.88	1.26	10.02	9.00	8.76	8.00	2.23	.....	2.23	2.00	1.68	1.62	23.89	21.00	1492
4.92	2.97	1.65	9.54	9.00	*7.89	8.00	1.33	.....	1.33	1.00	.87	.82	18.69	20.00	1253
														21.00	1354
5.26	3.02	1.47	9.75	9.00	8.28	8.00	2.11	.....	2.11	2.00	.91	.82	20.00	20.00	1283
														19.00	1498
4.50	2.99	1.10	8.59	.....	7.49	.....	2.67	.....	2.67	.....	1.12	.....	20.35	.....	1640
														16.50	1347
1.28	6.19	1.64	9.11	.....	*7.47	8.00	1.22	.....	1.22	1.00	.71	.41	17.41	17.00	1721
2.29	5.26	1.45	9.00	9.00	*7.55	8.00	2.31	.....	*2.31	4.00	1.76	1.24	22.96	24.00	1776
4.76	4.32	1.40	10.48	.....	9.08	8.00	1.56	.....	1.56	1.00	.82	.82	19.86	.....	1340
1.81	6.05	2.90	10.76	.....	7.86	.....	1.99	.....	1.99	.....	1.80	.....	23.88	24.00	1446
														22.00	1446
5.23	3.30	2.50	11.03	.....	*8.53	9.00	2.22	.....	2.22	2.00	1.45	1.24	23.18	24.00	1774
														17.00	1490
5.60	3.34	1.37	10.31	9.50	8.94	8.00	2.33	.....	2.33	2.00	.57	.42	16.05	20.00	1304
														18.00	1768
														16.00	1787
														15.00	1372
4.72	3.32	1.15	9.19	7.50	8.04	6.00	1.53	.....	1.53	1.00	.35	.17	13.68	16.00	1308
														.....	1791
														22.00	1305
5.21	5.35	1.20	*11.76	12.00	10.56	10.00	1.93	.....	*1.93	3.00	.97	.83	22.36	20.00	1491
3.15	6.47	1.36	10.98	9.50	9.62	8.00	1.51	.....	*1.51	2.00	.65	.42	16.11	15.00	1293

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	International Seed Co., Rochester, New York.		
1611	International Grain and Grass Fertilizer,	J. H. Antram, New Salem,	10.73
1570	Potato and Truck Manure,	Wm. Tayman, Lavansville,	12.13
	Jarecki Commercial Co., Sandusky, O.		
1870	†Fish and Potash Grain Special,	Henry Menke, New Kensington,	14.36
1887		Pearce Milling Co., Gibsonia,	
	Lackawanna Animal Product Co., Moosic, Pa.		
1186	Big Yield,	Perry Gentzel, Bellefonte,	10.19
1181	†Moosic Phosphate,	Ezra Tressler, Penn'a Furnace,	11.60
1822		Schuyler C. Stokes, Slicksville,	
	Lackawanna Fertilizer and Chemical Co., Moosic, Pa.		
1438	†Moosic Phosphate,	D. A. Kingsley, E. Smithfield,	8.75
1432		J. H. Campbell, Burlington,	
1850		L. B. Geiger, Hoffman,	
	Lancaster Chemical Co., Lancaster, Pa.		
1701	†Dewey Brand for Tobacco and Spring Crops No. 2.	C. J. Bushey, Dillsburg,	9.80
1818		M. J. Burkholder, Manheim,	
1451	†Flag Brand Superphosphate No. 5,	C. J. Bushey, Dillsburg,	13.48
1902		Samuel Keene, Quarryville,	
1839	Flag Brand Superphosphate,	M. J. Burkholder, Manheim,	11.72
1449	†Hard Times Fertilizer No. 6,	C. J. Bushey, Dillsburg,	9.93
1838		M. J. Burkholder, Manheim,	
1699	Pure Dissolved Animal Bone and Potash,	C. J. Bushey, Dillsburg,	11.44
	D. Levan, Lebanon, Pa.		
1507	†Bone and Potash Compound,	Franklin Shirk, Sinking Springs,	12.82
1813		J. D. Sellers, Ephrata,	
1508	†Lebanon Special Fertilizer,	Franklin Shirk, Sinking Spring,	12.22
1811		J. D. Sellers, Ephrata,	
1509	†Wheat and Grass Fertilizer,	Franklin Shirk, Sinking Springs,	11.55
1749		J. D. Smith, Hamburg,	
1814	Wheat and Grass Special,	J. D. Sellers, Ephrata,	10.02
	Lister's Agricultural Chemical Co., Newark, N. J.		
1829	†Ammoniated Dissolved Bone Phosphate,	R. D. Conover, Newtown,	11.94
1943		Wm. H. Fritz, Berwyn,	
1643	Corn No. 2 Fertilizer,	H. E. Fretz, Perkasie,	12.81
1202	†Special Wheat Fertilizer,	E. J. Gerlach, Bethlehem,	11.97
1706		D. A. Urich, Mechanicsburg,	
1167	Special Wheat Grower,	Frank Douglass, Indiana,	12.52
1307	†Standard Pure Bone Superphosphate of Lime.	S. L. Stryker, Petersburg,	11.71
1944		Wm. H. Fritz, Berwyn,	
1201	†U. S. Superphosphate,	E. J. Gerloch, Bethlehem,	12.84
1169		Frank Douglass, Indiana,	
1352		B. Savidge, Turbotville,	
	Mapes Formula and Peruvian Guano Co., New York.		
1798	Ammoniated Dissolved Bone with Potash,	Martin & Muth, Lititz,	13.30
1854	Cereal Brand,	O. H. Peters, Saegersville,	12.75
1217	†Complete Manure A. Brand,	Chas. E. Ahlum, Richlandtown,	10.43
1704		E. W. Rupp, Shiremanstown,	
1705	†Grain Brand,	E. W. Rupp, Shiremanstown,	10.38
1385		Henry S. Beidler, Doylestown,	
1915		Moyer & Mattern, West Point,	
	N. Markel, Seitzland, Pa.		
1730	Ammoniated Bone Phosphate,	A. C. Neller, Stewartstown,	8.27
1731	Potato Grower Phosphate,	A. C. Neller, Stewartstown,	7.71

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. ——)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
7.27	3.51	1.98	12.76	11.00	10.78	10.00	2.27	.....	2.27	2.00	1.72	1.65	26.41	25.00	1611
5.99	2.48	1.34	9.81	9.00	8.47	8.00	6.29	.....	*6.29	7.00	1.49	1.24	26.91	.....	1570
														.....	1870
6.54	4.14	1.90	12.58	10.00	10.68	9.00	2.01	.....	2.01	2.00	*1.13	1.24	23.76	23.00	1887
1.09	4.16	2.53	*7.78	8.00	*5.25	6.00	6.08	.....	6.08	5.00	2.03	2.00	26.14	.....	1186
														.....	1181
1.02	5.27	1.89	*8.18	9.00	*6.29	7.00	2.05	.....	2.05	1.50	*1.03	1.25	18.63	22.00	1822
														20.00	1438
2.51	3.94	2.62	9.07	9.00	*6.45	7.00	1.78	.....	1.78	1.50	1.50	1.25	20.76	20.00	1432
														20.00	1850
														21.00	1701
1.94	5.66	2.34	9.94	9.00	*7.60	8.00	3.79	.....	*3.79	4.00	*1.20	1.24	22.66	24.00	1818
														19.00	1451
1.95	5.90	2.64	*10.49	11.00	*7.85	10.00	2.23	.....	2.23	2.00	*1.23	2.47	21.70	.....	1902
2.42	5.62	2.26	10.30	9.00	8.04	8.00	2.29	.....	2.29	2.00	1.28	1.24	21.99	20.00	1839
														15.00	1449
.99	5.90	1.96	*8.85	9.00	*6.89	8.00	2.50	.....	2.50	2.00	.49	.41	14.73	17.00	1838
4.19	5.62	2.84	12.65	11.00	*9.81	10.00	3.93	.....	*3.93	5.00	*1.30	1.65	25.84	26.50	1699
														20.00	1507
1.06	6.37	2.59	10.02	9.00	*7.43	8.00	5.07	.....	5.07	5.00	*1.42	1.65	24.68	20.00	1813
														18.50	1508
1.25	6.14	2.08	9.47	9.00	*7.39	8.00	2.56	.....	2.56	2.00	*1.66	2.06	22.93	18.50	1811
														18.50	1509
1.48	5.54	1.91	*8.93	9.00	*7.02	8.00	5.41	.....	5.41	5.00	.85	.82	22.02	19.00	1749
1.72	7.10	2.36	11.18	9.00	8.82	8.00	1.94	.....	1.94	1.50	*.96	1.24	21.08	16.50	1814
														25.00	1829
6.30	2.82	2.80	11.92	9.00	9.12	8.00	1.85	.....	1.85	1.50	2.26	2.06	26.91	26.00	1943
8.59	2.07	2.18	12.75	.....	10.57	.....	4.14	.....	4.14	.....	1.80	.....	28.65	26.00	1643
														24.00	1202
6.79	2.39	1.93	11.11	9.00	9.18	8.00	3.15	.....	3.15	3.00	1.67	1.65	25.40	23.00	1706
7.19	2.66	2.09	11.94	9.00	9.85	8.00	3.12	.....	3.12	3.00	1.80	1.65	26.78	25.00	1167
														22.85	1307
7.33	2.66	2.27	12.26	11.00	9.99	9.00	2.42	.....	2.42	2.00	2.62	2.50	29.66	28.00	1944
														19.00	1201
7.24	1.66	1.41	10.31	10.00	*8.90	9.00	2.22	.....	2.22	2.00	1.29	1.03	22.40	24.00	1169
														20.00	1352
4.96	4.52	3.05	12.53	12.00	*9.48	10.00	2.12	.....	2.12	1.50	1.31	1.24	23.74	29.00	1798
2.59	3.80	1.84	8.23	8.00	6.39	6.00	3.59	.....	3.59	3.00	1.74	1.65	23.23	29.00	1854
														35.00	1217
4.28	6.13	3.77	14.18	9.00	10.41	8.00	2.85	.....	2.85	2.00	2.43	.82	30.69	32.00	1704
														23.00	1705
4.21	3.21	1.58	9.00	.....	*7.42	8.00	4.91	.....	4.91	4.00	.88	.82	21.94	27.00	1385
														25.00	1915
4.82	3.73	2.55	11.10	9.00	8.55	8.00	2.11	.....	2.11	2.00	*1.58	1.65	23.73	19.20	1730
4.27	3.74	2.24	10.25	7.00	8.01	6.00	4.52	.....	4.52	4.00	*1.48	1.65	25.03	21.12	1731

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	The D. B. Martin Co., Philadelphia, Pa.		
1765	†Crop Producer,	Adam Seaman, Hamburg,	9.70
1953		R. A. Richards & Co., Mendenhall,	
1342	Dissolved Organic Compound,	H. H. Knauff, Lewisburg,	12.40
1233	†Extra Animal Bone and Potash,	S. H. Purdy, Murdockville,	5.47
1376		Wm. E. Richardson, Chalfont,	
1948	Dissolved Organic Compound,	Malvern Farm Supply Co., Malvern,	12.39
1766	†One, Eight and Four,	Geo. E. Hepner, Shoemakersville,	13.21
1373		Wm. E. Richardson, Chalfont,	
1232		S. H. Purdy, Murdockville,	
1879		J. A. Little, Washington,	
1928		Wells & Walker, Downingtown,	
1341	†Sure Grower,	H. H. Knauff, Lewisburg,	12.73
1234		S. H. Purdy, Murdockville,	
1374		Wm. E. Richardson, Chalfont,	
	McCalmont & Co., Bellefonte, Pa.		
1195	$25 Champion Ammoniated Bone Superphosphate.	McCalmont & Co., Bellefonte,	10.18
	Miller Fertilizer Co., Baltimore, Md.		
1736	†Ammoniated Dissolved Bone,	James S. Butler, York,	8.95
1972		Miller Harkins, Hickory Hill,	
1322	Cyclone,	Clark T. Alexander, Naginey,	9.29
1460	Harvest Queen,	Spera Bros., Dillsburg,	8.30
1975		Miller Harkins, Hickory Hill,	
1459	†Hustler Phosphate,	Spera Bros., Dillsburg,	7.81
1974		Miller Harkins, Hickory Hill,	
1458	W. G. Phosphate,	Spera Bros., Dillsburg,	6.09
	W. L. & H. L. Myers, Doylestown, Pa.		
1381	Special Compound for all Crops,	W. L. & H. L. Myers, Doylestown,	9.33
	Nassau Fertilizer Co., New York.		
1537	†General Favorite,	J. A. Ewing, Hookstown,	12.85
1198		W. M. Cronister, Philipsburg,	
1641		Levi D. Yoder, Perkasie,	
1333	†Plow Brand,	S. K. Strickler, Mifflinburg,	13.83
1619		A. M. McClure, Everett,	
1620	†Wheat and Grass Grower,	A. M. McClure, Everett,	12.49
1358		David N. Williams, Jerseytown,	
1642		Levi D. Yoder, Perkasie,	
	Ohio Farmers' Fertilizer Co., Columbus, Ohio.		
1243	†General Crop Fish Guano,	B. F. McClure & Bro., Burgettstown,	9.21
1540		W. S. McMinn, Darlington,	
	Oxford Packing Works, Oxford, Pa.		
1976	Bone Phosphate No. 2,	W. H. Townsend, Lincoln University	7.18
1977	O. P. W. No. 1,	W. H. Townsend, Lincoln University	6.33
	Patapsco Guano Co., Baltimore, Md.		
1577	Patapsco Grain and Grass Producer,	Andrew Rishel, Meyersdale,	15.01
1578	Patapsco Special Wheat Compound,	Andrew Rishel, Meyersdale,	10.68
	Piedmont-Mt. Airy Guano Co., Baltimore, Md.		
1564	Insola Guano for Corn, Oats and Other Spring Crops.	A. H. Ulsh, Millerstown,	9.56
1738	†Levering's Ammoniated Bone,	C. T. Grove, Felton,	8.58
1371		M. Gillis, Hughesville,	
1860		P. B. Oswald, New Tripoli,	
1311	†Levering's Harvest Queen,	J. G. Simpson, Huntingdon,	9.00
1461		J. H. Little, Idaville,	
1270	†Pennsylvania Grain Grower,	Ter Ream, Scalp Level,	11.16
1265		N. D. Shaffer, Holsopple,	
1859		P. B. Oswold, New Tripoli,	
1877		J. A. Little, Washington,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. ——.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
4.21	6.25	5.00	15.46	15.00	10.46	10.00	.....	.....	.22	.....	*.77	1.03	16.88	17.00	1765
														17.00	1953
5.74	5.58	2.44	13.76	13.00	11.32	9.00	2.39	.....	2.39	2.00	*1.01	1.03	24.44	.....	1342
														24.00	1233
.31	11.05	13.05	24.41	16.00	11.36	.....	2.23	.....	*2.23	2.50	1.70	1.65	32.36	29.00	1376
6.12	5.41	2.08	13.61	13.00	11.53	9.00	3.11	.....	3.11	2.00	*.96	1.03	24.99	21.00	1948
														19.00	1766
														23.00	1373
5.54	4.70	1.87	12.11	12.00	10.24	8.00	3.74	.....	*3.74	4.00	1.11	.82	24.81	20.00	1232
														22.50	1879
														22.00	1928
														.....	1341
4.41	4.81	2.72	*11.94	12.00	9.22	8.00	2.86	.....	2.86	1.00	.96	.82	22.56	17.00	1234
														20.00	1374
6.91	2.55	1.42	10.88	10.00	9.46	8.00	4.04	.....	4.04	4.00	*1.50	1.65	25.74	24.00	1195
														21.00	1736
5.84	3.18	1.15	10.17	9.50	9.02	8.00	2.41	.....	2.41	2.00	*1.42	1.65	23.01	24.00	1972
5.61	3.54	1.28	10.43	.....	9.15	.....	3.36	.....	3.36	.....	2.12	.....	27.15	.....	1322
														21.50	1460
6.78	3.64	1.07	11.49	9.50	10.42	8.00	3.29	.....	3.29	2.75	*1.02	1.03	23.77	24.00	1975
														18.50	1459
7.09	2.33	.60	10.02	9.50	9.42	8.00	1.42	.....	1.42	1.00	*.75	.83	19.42	22.00	1974
4.33	3.90	.73	8.96	8.50	8.23	7.00	1.44	.....	1.44	1.00	.50	.42	14.17	17.50	1458
8.31	1.87	1.07	11.25	.....	10.18	10.00	2.18	.....	2.18	2.00	*.77	1.00	21.32	22.00	1381
														20.00	1537
6.13	2.82	1.01	9.96	9.00	8.95	8.00	4.07	.....	4.07	4.00	.85	.82	22.26	22.00	1198
														23.00	1641
														22.00	1333
4.58	3.20	1.68	9.46	9.00	*7.78	8.00	2.11	.....	2.11	2.00	*1.61	1.65	22.48	25.00	1619
														22.00	1620
5.50	3.52	1.51	10.53	9.00	9.02	8.00	2.10	.....	2.10	2.00	.92	.82	20.83	17.50	1358
														20.00	....
3.11	5.31	2.07	10.49	.....	8.42	7.00	.70	.....	*.70	1.00	*.51	.82	14.02	22.00	1243
														22.00	1540
3.73	3.40	1.95	9.08	.....	*7.13	8.00	7.54	.....	7.54	6.00	1.44	1.44	26.86	24.00	1976
2.68	4.23	2.83	9.74	.....	*6.91	7.00	6.97	.....	6.97	6.00	*2.00	2.47	28.75	26.00	1977
4.12	3.64	1.38	*9.14	10.00	*7.76	8.00	4.36	.....	4.36	4.00	.98	.82	22.09	20.00	1577
8.54	2.68	2.12	*13.34	14.00	11.22	9.00	2.73	.....	2.73	2.50	*1.74	1.85	27.73	25.00	1578
6.05	1.49	1.08	8.62	.....	7.54	7.00	2.51	.....	2.51	2.00	.61	.41	18.14	16.50	1564
														20.00	1738
7.28	2.40	.96	10.64	.....	9.68	9.00	3.37	.....	3.37	3.00	.92	.82	22.53	22.00	1371
														18.00	1860
														20.00	1311
6.44	1.88	.55	8.87	.....	8.32	8.00	2.34	.....	2.34	2.00	.84	.82	19.62	18.50	1467
														22.00	1270
5.91	1.80	.54	8.25	.....	7.71	7.00	4.59	.....	*4.59	5.00	.82	.82	21.03	21.00	1265
														20.00	1859
														23.00	1877

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
1266	†Piedmont Pure Raw Bone Mixture,	N. D. Shaffer, Holsopple,	8.45
1271		Ter Ream, Scalp Level,	
1628	Piedmont Pure Raw Bone Mixture,	J. S. Welzell, Carrolltown,	8.78
1272	†Royal Ammoniated Bone and Potash,	Ter. Ream, Scalp Level,	10.38
1264		N. D. Shaffer, Holsopple,	
1477		A. L. Hoffman, Biglerville,	
	Pollock Fertilizer Co., Baltimore, Md.		
1644	Owl Brand Guano,	Benj. F. Shearer, Dublin,	10.55
1416	†Special Wheat Grower,	J. A. C. Rider, Tyrone,	13.63
1191		I. J. Dreese, Lamont,	
1646		Benj. F. Shearer, Dublin,	
1739		Elias Gahle, Red Lion,	
	Pugh & Lyons, Oxford, Pa.		
1904	Bone Phosphate,	S. R. Dickey & Co., Oxford,	5.80
	Ramsberg Fertilizer Co., Frederick, Md.		
1466	Ammoniated Bone Phosphate,	H. J. Troestel, York Springs,	11.23
1722	Excelsior Plant Food,	J. E. Copenhaver, Bino,	11.83
1465	Old Virginia Compound,	H. J. Troestel, York Springs,	12.75
	Rasin-Monumental Co., Baltimore, Md.		
1698	Empire Guano,	John M. Ference, Dillsburg,	7.78
1625	Potato Manure,	J. J. Hank, Carrolltown,	14.38
1697	Rasin's XXX Fertilizer,	John M. Ference, Dillsburg,	9.23
	J. G. Reichard & Bro., Allentown.		
1856	Lehigh Potato Manure,	J. G. Reichard, Allentown,	9.81
	The Scientific Fertilizer Co., Pittsburg, Pa.		
1524	†Scientific Economy Fertilizer,	J. A. Denny, Cannonsburg,	7.73
1631		W. A. Baver, Bradley Jct.,	
1250	†Scientific Grain Grower,	Levi Long, Trent,	7.55
1172		J. R. Henderson, Indiana,	
1292		Jos. Rhodes, Edie,	
1574	†Scientific Wheat and Clover,	R. R. Snyder, New Lexington,	8.28
1249		Levi Long, Trent,	
1865		R. J. Toepper, Tarentum,	
	Schaal-Sheldon Fertilizer Co., Erie, Pa.		
1543	Farmers' Favorite for wheat and Corn,	J. W. Scott & Co., Pittsburg,	10.38
	Scott Fertilizer Co., Elkton, Md.		
1851	†Grain Special,	Elias Woodring & Co., Newside,	10.50
1392		Isaac Parry, Ivyland,	
1896		S. M. Book & Bro., Quarryville,	
1758	†Standard Phosphate,	M. M. Anderson, Earlville,	7.03
1391		Isaac Parry, Ivyland,	
1802		Martin & Muth, Lititz,	
1835	Sure Growth Compound,	Edward Shellcross, Bustleton,	11.40
1499	†Sure Growth Superphosphate,	L. A. Geiger, Joanna,	10.24
1390		Isaac Parry, Ivyland,	
1801		Martin & Muth, Lititz,	
1501	†Wheat and Grass Grower,	L. A. Geiger, Joanna,	8.23
1800		Martin & Muth, Lititz,	
	M. L. Shoemaker & Co., Philadelphia Pa.		
1221	†Good Enough Superphosphate,	W. B. Fretz, Zion Hill,	10.66
1506		Jas. S. Heffner, Kutztown,	
1826	†N. J. Special for Wheat and Clover,	Morris Briggs, Woodbound,	8.38
1845		Wm. M. Gehman, Macungie,	
1753	†Swift Sure Guano for Fall Trade,	K. C. Kurtz, Geigers Mills,	11.09
1223		W. B. Fretz, Zion Hill,	
1855		Nathan Handwork, Saegersville,	
1924	Swift Sure Phosphate for General Use,	John Swayne, Sharon Hill,	10.98

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.				
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating. (See p. ——)	Selling price of 2,000 pounds at the point of selection.	Sample number.
2.65	4.56	5.15	12.36	.....	*7.21	8.00	2.32	.....	2.32	1.50	1.32	1.03	22.47	23.00	1266
5.93	3.35	2.75	12.03	.....	9.28	8.00	3.70	.....	3.70	1.50	*.99	1.03	23.76	24.00	1271
														25.00	1628
5.48	1.89	.91	8.28	.....	7.37	6.00	3.23	.....	3.23	3.00	1.16	1.07	20.97	20.00	1272
														20.25	1264
														21.00	147
5.45	3.38	.93	9.76	8.00	8.83	7.00	1.73	.....	1.73	1.50	.47	.41	14.78	21.00	1644
5.41	3.55	1.34	10.30	9.00	8.96	8.00	2.14	.....	2.14	2.00	.91	.82	20.70	20.00	1416
														.....	1191
														23.00	1646
														20.00	1739
1.43	4.00	2.81	*8.24	11.00	*5.43	6.00	6.99	.....	6.99	5.00	1.70	1.65	25.92	27.00	1904
4.18	5.75	2.17	12.10	12.00	*9.93	10.00	2.00	.....	2.00	2.00	1.03	.82	22.64	18.50	1466
6.78	4.35	2.29	13.42	11.00	11.13	9.00	1.70	.....	*1.70	2.00	*1.58	1.65	25.96	22.00	1722
5.90	5.16	2.35	13.41	11.00	11.06	9.00	1.83	.....	*1.83	2.00	*1.09	1.24	23.97	19.50	1465
3.82	4.19	1.35	*9.36	9.50	8.01	8.00	2.55	.....	2.55	2.00	*1.34	1.65	21.97	21.00	1698
4.56	3.41	.37	8.34	7.50	7.97	6.00	4.01	.....	4.01	4.00	*.89	3.29	21.64	25.00	1625
4.14	4.15	1.72	10.01	9.50	8.29	8.00	4.59	.....	*4.59	5.00	*1.46	1.65	24.98	24.00	1697
5.76	3.24	1.64	10.64	9.00	9.00	8.00	9.71	.....	*9.71	10.00	*1.35	1.65	30.50	25.50	1856
4.13	3.44	2.45	10.02	10.00	*7.57	9.00	4.91	.....	4.91	4.00	1.68	1.65	25.88	25.00	1524
														23.00	1631
3.71	3.52	1.32	*8.55	9.00	*7.23	8.00	1.70	.....	1.70	1.00	.92	.82	18.38	17.00	1250
														18.00	1172
														18.00	1292
5.21	3.93	1.52	10.66	10.00	9.14	9.00	4.07	.....	4.07	4.00	.92	.82	22.92	20.70	1574
														21.00	1249
														23.00	1865
3.42	4.83	1.40	9.65	9.00	8.25	8.00	2.12	.....	2.12	2.00	1.11	.82	20.76	24.00	1543
6.69	2.86	1.56	*11.11	12.00	*9.55	10.00	5.42	.....	5.42	4.00	*.40	.41	19.03	20.00	1851
														20.00	1392
														19.00	1896
2.67	4.00	4.96	11.63	10.00	*6.67	8.00	2.51	.....	2.51	2.00	*1.02	1.24	20.71	20.00	1758
														21.00	1391
														21.50	1802
3.90	3.33	3.54	10.77	8.00	7.23	7.00	7.29	.....	7.29	7.00	*2.96	3.30	33.73	31.00	1835
9.02	2.91	1.92	13.85	12.00	11.93	10.00	2.95	.....	2.95	2.50	1.76	1.65	28.59	24.00	1499
														24.00	1390
														22.50	1801
2.96	5.26	3.55	*11.77	12.00	*8.22	10.00	2.81	.....	2.81	2.00	*.38	.41	16.12	18.00	1501
														19.50	1800
6.74	4.87	2.54	14.15	12.00	11.61	8.00	2.57	.....	2.57	2.00	1.71	1.65	27.91	.....	1221
														24.00	1506
4.93	4.72	2.29	11.94	.....	9.65	8.00	3.09	.....	3.09	2.00	1.21	.82	24.14	25.00	1826
														21.00	1845
5.42	3.51	3.76	12.69	.....	8.93	8.00	5.38	.....	5.38	5.00	1.93	1.65	29.58	23.00	1753
														.....	1223
6.42	2.24	1.31	*9.97	14.00	*8.66	9.00	2.28	.....	*2.28	4.50	*1.64	2.88	23.66	23.00	1855
														35.00	1924

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Chas. A. Sickler & Bro., Wilkes-Barre, Pa.		
1361	†King Phosphate,	Ellis Eves & Bro., Millville,	5.53
1426		M. McVicar, Hop Bottom,	
	F. A. Simon, Maud P. O., Pa.		
1820	Farmers' Favorite High Grade Phosphate,	F. A. Simons, Maud,	7.52
	Southern Fertilizer Co., York, Pa.		
1261	†Royal Wheat and Grass Grower,	A. J. Shanlüs, Sipesville,	12.05
1295		C. Putman, Barronvale,	
1207	Royal Wheat and Grass Grower,	Levin A. Lerch, Bethlehem,	7.86
	The Taylor Provision Co., Trenton, New Jersey.		
1387	Bone Tankage and Potash,	K. K. Vannersdale, Langhorne,	8.56
	J. M. Templin, Honeybrook, Pa.		
1750	Atlas Brand No. 4,	James Stoudt, Upper Berne,	9.20
1751	Farmers' Complete Fertilizer No. 3,	James Stoudt, Upper Berne,	10.81
	I. P. Thomas & Sons Co., Philadelphia, Pa.		
1703	Farmers' Choice Bone Phosphate,	E. W. Rupp, Shiremanstown,	10.18
1637	†Improved Superphosphate,	Linford Foulke, Quakertown,	10.86
1457		D. F. Stitzel, York Springs,	
1748		B. B. Sunday, Upper Berne,	
1762		D. G. Gross, Monocacy,	
1761	Tip Top Raw Bone Superphosphate,	D. G. Gross, Monocacy,	11.04
1447	†Wheat and Corn Fertilizer,	Compton & Lily, Troy,	10.52
1436		Chas. J. Beardsley, Hoblet,	
1379		John B. Detwiler, Doylestown,	
1486		D. F. Stitzel, York Springs,	
1513		Levi Miller, Sinking Springs,	
	James Thomas, Williamsport, Pa.		
1336	†High Grade Bone Superphosphate,	C. A. Noll, Williamsport,	15.63
1769		Jas. Thomas, Williamsport,	
1314	High Grade Superphosphate,	L. M. Watts, Belleville,	14.45
	Trenton Bone Fertilizer Co., Trenton, N. J.		
1388	Trenton Bone and Potash,	L. A. Howells, Morrisville,	5.95
1389	Trenton Grain Manure,	L. A. Howells, Morrisville,	7.69
	F. W. Tunnell & Co., Philadelphia, Pa.		
1942	†Ammoniated Dissolved Bone and Potash,	W. H. Matlock, West Chester,	11.29
1846		Wm. H. Gehman, Macungie,	
1963		Samuel Yeakle, Ft. Washington,	
1763	†Reseived Phosphate,	J. S. Lenhart, Hamburg,	12.61
1754		Geo. H. Linderman, Scarlctis Mills,	
1913		Moyer & Mattern, West Point,	
1799	Royal Wheat Grower,	F. B. Buch, Lititz,	14.53
1914		Moyer & Mattern, West Point,	
1832	Universal Grower,	A. L. Stout, Churchville,	8.09
	Tuscarora Fertilizer Co., Baltimore, Md.		
1596	Standard Phosphate,	T. M. Smith, Jefferson,	8.82
1654	Tuscarora Sure Growth,	Jas. Spengler, Klecknersville,	8.42
1657	Tuscarora York State Special,	Jas. Spengler, Klecknersville,	8.21
	J. E. Tygert Co., Philadelphia, Pa.		
1652	Gold Edge Potato Guano,	Bowen Bros., Perkasie,	12.30
1834	Standard Bone Phosphate,	J. A. Danehower, Southampton,	12.34
	Virginia-Carolina Chemical Co., Richmond, Va		
1719	National Ammoniated Guano,	Greencastle Elevator Co., Greencastle	9.89
1708	Special Compound for Wheat,	John A. Linsey, Carlisle,	9.39

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.				
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating. (See p. ——.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
1.71	3.30	.83	5.84	.....	*5.01	8.00	2.74	.....	2.74	2.00	*.77	.82	16.17	19.00	1361
														19.00	1426
4.66	2.61	2.64	9.91	9.50	7.27	7.00	3.33	.....	3.33	3.00	*1.97	2.06	25.12	30.00	1820
														17.00	1261
4.21	4.51	1.26	9.98	9.00	8.72	8.00	1.69	.....	1.69	1.00	.52	.41	15.60	17.25	1295
3.22	3.92	1.05	*8.19	9.00	*7.14	8.00	1.11	.....	1.11	1.00	.49	.41	13.16	16.00	1207
4.08	3.90	2.12	10.10	.....	7.98	1.00	1.90	.....	*1.90	8.00	*1.05	2.06	20.41	.....	1387
4.27	4.85	3.35	12.47	11.00	*9.12	10.00	3.83	.....	*3.83	4.00	1.86	1.65	27.55	26.00	1750
1.74	6.94	1.84	10.52	10.00	*8.68	9.00	2.27	.....	2.27	2.00	*.70	.82	19.96	19.00	1751
7.29	2.48	1.20	10.97	10.50	9.77	9.50	2.39	.....	2.39	2.00	*1.46	1.65	24.06	27.00	1703
														21.00	1637
6.51	3.52	1.29	*11.32	12.00	10.03	10.00	.53	.37	*.90	1.00	*.78	.82	20.17	23.00	1457
														20.00	1748
														20.00	1762
6.82	2.41	1.28	10.51	10.00	9.23	8.00	3.14	.....	*3.14	4.00	*2.22	2.47	27.42	29.00	1761
														.....	1447
														23.00	1436
3.33	5.79	1.64	*10.76	11.00	9.12	9.00	1.73	1.26	*2.99	3.00	*.79	.82	21.67	.....	1379
														21.00	1486
														20.00	1513
4.91	4.44	2.58	*11.93	14.00	9.35	9.00	1.73	.63	*2.36	2.50	*1.81	2.06	25.83	25.00	1336
5.44	4.88	1.56	*11.88	14.00	10.32	9.00	2.69	.....	2.69	2.50	2.10	2.06	27.91	25.00	1769
														25.00	1314
1.34	9.51	4.82	15.67	.....	10.85	10.00	3.13	.....	*3.13	10.00	2.39	2.06	31.72	28.00	1388
2.51	5.99	3.72	12.22	.....	8.50	8.00	3.67	.....	3.67	3.00	*1.60	1.65	25.80	21.00	1389
														.....	1942
.96	5.32	.97	*7.25	10.00	*6.28	9.00	2.33	.....	2.33	2.00	.66	.21	16.81	18.00	1846
														19.00	1963
														19.00	1763
.90	6.00	1.72	*8.62	9.00	*6.90	8.00	2.41	.....	2.41	1.00	.68	.41	18.06	16.00	1754
														19.00	1913
.50	6.57	2.60	*9.67	11.00	*7.07	10.00	2.19	.....	2.19	1.00	1.16	.82	20.35	22.00	1799
1.98	6.58	1.53	10.09	.....	8.56	.....	1.63	.....	1.63	.....	1.10	.....	20.71	23.00	1914
														20.00	1832
5.55	2.76	2.11	10.42	10.00	8.31	8.00	2.41	.....	2.41	2.00	*1.49	1.65	23.13	22.00	1596
6.83	1.95	.64	*9.42	10.00	8.78	8.00	2.95	.....	*2.95	3.00	.47	.41	15.85	18.00	1654
5.90	2.21	1.54	*9.65	10.00	8.11	8.00	4.37	.....	4.37	4.00	.80	.82	21.69	19.00	1657
5.71	3.18	.74	9.63	8.00	8.89	7.00	.80	3.26	*4.06	5.00	*1.17	1.65	23.92	29.00	1652
5.93	3.20	1.28	10.41	9.50	9.13	8.00	2.20	.....	2.20	2.00	*1.26	1.65	22.39	25.00	1834
3.53	5.52	.60	9.65	9.50	9.05	8.00	4.63	.....	4.63	4.00	*.70	.82	22.15	18.00	1719
4.66	4.21	1.25	10.12	9.50	8.87	8.00	1.46	.....	1.46	1.00	*.70	.82	18.98	18.00	1708

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Walker Stratman & Co., Pittsburg, Pa.		
1528	†Big Bonanza,	R. J. Wallace, Bishop,	7.31
1694		W. J. Hotchkiss, Harmonsburg,	
1585	†Four Fold Fertilizer,	Wm. J. Stewart, Jr., Brownsville,	7.84
1521		W. W. Inglefield, Murdocksville,	
1588		G. W. Hewett & Son, Carmichaels,	
1691		W. J. Hotchkiss, Harmonsburg,	
1875	Grain King,	C. Doctor, Monaco	7.64
1531	Grain Manure,	R. J. Wallace, Bishop,	4.95
	F. K. Walt & Co., Waynesburg Jct., Pa.		
1806	Ammoniated Bone Phosphate,	N. H. Sprecher, Ephrata,	10.87
1857	†Colcine Bone Superphosphate,	Wm. H. Hoffman, New Tripoli,	8.37
1650		J. B. Rosenberger, Dublin,	
1971		F. H. Soneler & Son, Lansdale,	
1917	Clover Brand Phosphate,	Wm. R. Heebner, West Point,	9.23
1519	H. G. Animal Bone Phos. with Potash,	John W. Rentschler, Hamburg,	7.48
1651	†Special H. G. Clover and Potato,	J. B. Rosenberger, Dublin,	10.43
1916		Wm. R. Heebner, West Point,	
1807	Sure Growth Phosphate,	N. H. Sprecher, Ephrata,	9.76
1858	†XX Flesh and Animal Bone Phosphate,	Wm. H. Hoffman, New Tripoli,	10.03
1649		J. B. Rosenberger, Dublin,	
1970		F. H. Soneler & Son, Lansdale,	
	Abraham Waltenmyer, Stewartstown, Pa.		
1732	Bone Phosphate,	A. Waltenmyer, Stewartstown,	9.34
	John Whann & Son, Philadelphia, Pa.		
1735	Special Mixture,	J. C. Leib & Co., Stewartstown,	11.99
	W. E. Whann, William Penn, Pa.		
1552	†Chester Valley Available Ammoniated Phosphate.	Francis Hower, Mifflintown,	7.44
1745		Jas. Yeager, Hamburg,	
1548	Chester Valley No. 2 Ammoniated Phos.	Francis Hower, Mifflintown,	6.19
1841	Chester Valley No. 2 Ammoniated Superphosphate.	A. M. Brennaman, Columbia,	6.35
1553	Chester Valley Raw Bone Superphosphate.	Francis Hower, Mifflintown,	8.38
1830		John Stackhouse, Richboro,	
1827	Chester Valley Special Potato and Truck,	Ira H. Cornell, Newtown,	8.82
	The Wooldridge Orchilla Co., Baltimore, Md.		
1321	Old Hickory Phosphate,	A. W. Nale, Milroy,	7.75
1808	Tiger Bone Stock Phosphate,	E. O. Hacker, Lincoln,	8.39
	Rob't A. Wooldridge Co., Baltimore, Md.		
1155	†Champion Giant Phosphate,	John Bodenshatz, Wilmore,	15.29
1329		C. C. Katharman, Hartleton,	
1154	†Chieftain Bone Stock Phosphate,	John Bodenshatz, Wilmore,	13.91
1194		J. W. Basore, Benore,	
1330	Double Quick Pure Bone Phosphate,	C. C. Catharman, Hartleton,	12.29
	York Chemical Works, York, Pa.		
1724	†Harvest Queen,	E. Daron, Dover,	13.64
1900		Wm. J. Hess, Quarryville,	
1485	Standard Fertilizer,	Amos F. Bushey, York Springs,	12.38
1740	Dempwolf's Standard Potash Fertilizer,	B. F. Stine, Holtz,	12.33
	Henry S. Zook, Elverson, Pa.		
1515	No. 5. Pride of Chester Corn, Oats and Wheat.	Wm. Wooley, Gouglersville,	9.44
1516	No. 6. Pride of Chester Dissolved Animal Bone Phosphate.	Wm. Wooley, Gouglersville,	7.01
1514	No. 7. Pride of Chester Dissolved Animal Bone for General Use	Wm. Wooley, Gouglersville,	8.70

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. ——.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
4.33	2.91	2.35	*9.59	10.00	*7.24	9.00	4.53	.....	4.53	4.00	2.00	1.65	26.41	24.00	1528
														23.00	1694
4.89	2.85	1.92	9.66	9.00	*7.74	8.00	2.75	.....	2.75	2.00	*1.30	1.65	21.96	20.00	1585
														18.00	1521
														22.00	1588
4.25	4.03	.96	*9.24	10.00	*8.28	9.00	4.00	.....	4.00	4.00	1.00	.82	22.11	22.00	1691
3.51	2.72	.99	*7.22	9.00	*6.23	8.00	1.84	.....	1.84	1.00	1.00	.82	17.66	22.50	1875
														18.00	1531
2.73	4.19	2.50	9.42	8.50	*6.92	7.50	1.37	.....	1.37	1.00	*.34	.82	13.12	18.00	1806
														19.00	1857
3.07	4.39	3.17	10.63	10.00	*7.46	8.00	2.89	.....	2.89	2.00	*.87	1.65	20.55	20.00	1650
														22.00	1971
3.09	5.16	3.49	11.74	.....	8.25	.....	3.43	.....	3.43	.....	.97	.....	22.51	20.75	1917
2.98	4.38	3.04	10.40	.....	7.36	.....	5.33	.....	5.33	.....	.65	.....	22.00	.....	1519
														28.00	1651
3.14	5.03	3.70	11.87	9.00	8.17	7.00	3.67	.....	*3.67	6.00	*.71	1.65	18.26	20.75	1916
2.80	4.58	2.80	10.18	9.50	*7.38	8.00	2.19	.....	2.19	2.00	.42	1.24	14.66	20.00	1807
														23.00	1858
2.71	6.05	3.34	12.10	.....	8.76	.....	2.88	.....	2.88	.....	.91	.....	22.21	25.00	1649
														26.00	1970
6.76	4.78	1.72	13.26	11.00	11.54	9.00	4.02	.....	4.02	4.00	*1.47	1.85	27.87	23.00	1732
5.27	2.42	.64	8.33	.....	7.69	7.00	4.67	.....	*4.67	6.00	*1.20	1.44	22.81	21.00	1735
														19.50	1552
4.29	3.21	.92	8.33	.....	7.41	7.00	3.32	.....	3.32	3.00	1.10	1.00	20.84	19.00	1745
4.57	2.93	1.18	8.68	8.00	7.50	7.00	2.68	.....	*2.68	3.00	*1.18	1.25	20.89	20.50	1548
4.55	3.43	1.06	9.04	8.00	7.98	7.00	2.26	.....	*2.26	3.00	1.28	1.25	21.31	24.00	1841
														26.50	1553
5.17	3.32	1.42	9.91	9.50	8.49	8.00	3.05	.....	3.05	3.00	*1.64	1.99	24.30	31.00	1830
4.31	3.45	1.11	8.87	8.50	7.76	7.00	5.18	.....	*5.18	7.00	2.95	2.47	31.00	32.00	1827
4.32	3.38	1.34	9.04	9.00	*7.70	8.00	3.74	.....	3.74	2.50	.88	.82	20.97	.....	1321
5.61	3.67	.92	10.20	9.00	9.28	8.00	5.12	.....	5.12	4.50	*.90	1.03	23.86	22.00	1808
														26.00	1155
5.83	3.18	1.35	10.36	.....	9.01	9.00	2.18	.....	2.18	2.00	.91	.82	20.80	18.50	1329
														25.00	1154
4.86	3.21	1.19	9.26	.....	8.07	8.00	2.18	.....	2.18	2.00	1.65	1.65	22.86	.....	1194
5.49	3.35	1.48	10.32	‡	8.84	.....	3.16	.....	3.16	.....	2.28	.....	27.54	23.00	1330
														17.50	1724
2.70	6.27	1.77	10.74	9.00	8.97	8.00	2.04	.....	2.04	2.00	*.74	.82	20.20	20.00	1900
2.60	6.46	1.40	10.46	10.00	9.06	8.00	4.61	.....	*4.61	5.00	1.71	1.65	26.68	21.00	1485
3.25	5.78	1.93	10.96	9.00	9.03	8.00	3.84	.....	*3.84	4.00	*.81	.82	22.38	20.00	1740
2.74	5.95	3.73	12.42	11.00	*8.69	10.00	2.33	.....	2.33	2.00	*.47	1.24	16.29	19.00	1515
2.35	4.69	4.51	11.55	9.00	*7.04	8.00	2.75	.....	*2.75	3.00	*1.01	1.24	21.19	24.00	1516
3.71	3.87	3.44	11.02	9.00	*7.58	8.00	5.12	.....	*5.12	6.00	*1.57	1.65	25.94	26.00	1514

*Constituent falls below guaranty.
‡Guaranteed total phosphoric acid .55 per cent. available .45 per cent.; potash .15 per cent.; nitrogen .13 per cent.

ROCK AND POTASH

Furnishing Phosphoric

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	The American Agricultural Chemical Co., New York, N. Y.	
1290	†Gem Alkoline Phosphate,	Levi Berkey, Somerset,
1184		J. H. Weber, Oak Hall,
1364		John Artley, Muncy,
1413		Skyles Miller & Co., Martinsburg,
	Clark's Cove Branch, New York, N. Y.	
1422	†Triumph Bone and Potash,	G. W. Cowperwaite, Carbondale,
1343		Peter Hause, New Columbia,
1788		Boger & Bingaman, Port Treverton,
	Crocker Branch, Buffalo, N. Y.	
1535	†Dissolved Bone and Potash,	S. E. Hood, Hookstown,
1225		J. S. Donaldson Hardware Co., Beaver,
1669		D. N. Infield, Jackson Center,
	Detrick Branch, Baltimore, Md.	
1484	Big crop Phosphate,	Wm. Golden & Son, Gettysburg,
	Maryland Branch, Baltimore, Md.	
1778	Maryland Linden Superphosphate,	S. M. Shuler & Son, Liverpool,
	Moro-Phillips Branch, Philadelphia, Pa.	
1810	Gem Alkaline Phosphate,	Elias Hornberger, Ephrata,
1323	Wheat Special,	W. J. Taylor, Reedsville,
	Reese Branch, Baltimore, Md.	
1205	Crown Phosphate and Potash,	Frank C. Williams, Easton,
1962	Wheat Special,	S. C. Walker & Co., Chodds Ford Jct.,
	Sharpless & Carpenter Branch, Philadelphia, Pa.	
1431	†Soluble Bone and Potash,	E. E. Sherman & Co., Ulster,
1189		Chas. McMcCormick, State College,
1502		L. A. Geiger, Joanna,
	Tygert-Allen Branch, Philadelphia, Pa.	
1587	Soluble Bone and Potash,	G. W. Hewett & Son, Carmichaels,
1933	†Star Soluble Bone and Potash,	H. A. Fetters, Downingtown,
1969		A. H. Fretz, Hatfield,
	Williams & Clark Branch, New York.	
1353	†Dissolved Bone and Potash,	J. Hogerman, Turbotville,
1285		Jacob Fike, Geiger,
1434		E. V. Nichols, East Smithfield,
	Zell Guano Branch, Baltimore, Md.	
1715	Electric Phosphate,	Gillen & Rice, Chambersburg,
	Armour Fertilizer Works, Chicago, Ill.	
1247	†Phosphate and Potash,	A. H. Walker, Burgettstown,
1257		Cook & Beerits, Somerset,
1297	†Phosphate and Potash No. 1,	McCalmont & Co., Bellefonte,
1166		Frank Douglass, Indiana,
1335		J. W. Painter & Co., Lewisburg,
1482		L. M. Alleman Hdw. Co., Gettysburg,

†Composite sample.

FERTILIZERS.

Acid and Potash.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Computed commercial value at Department ratio.	Selling price at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
8.00	2.46	4.61	.45	7.52	7.00	7.07	6.00	2.92	.....	*2.92	3.00	12.61	13.50	1290
													15.00	1184
													13.50	1364
													15.50	1413
11.79	7.00	2.99	1.09	11.08	11.00	*9.99	10.00	2.04	.....	2.04	2.00	14.08	14.00	1422
													15.00	1343
													14.00	1788
11.64	4.90	5.37	2.07	12.34	11.00	10.27	10.00	1.75	.....	*1.75	2.00	14.25	16.00	1535
													22.00	1225
													13.00	1669
12.95	4.16	4.30	.83	9.29	.....	8.46	.....	4.98	.....	4.98	.....	15.90	15.00	1484
11.03	8.53	3.43	.71	12.67	12.00	11.96	11.00	2.00	.....	2.00	2.00	15.30	14.50	1778
7.80	2.10	4.39	.65	7.14	.....	6.49	.....	3.11	.....	3.11	.....	12.49	12.50	1810
12.22	7.15	3.54	.69	11.38	11.00	10.69	10.00	2.00	.....	2.00	2.00	14.40	12.50	1323
11.17	8.52	2.87	.75	12.14	12.00	11.39	11.00	2.09	.....	2.09	2.00	15.03	16.00	1205
12.07	6.74	3.39	1.22	11.35	11.00	10.13	10.00	2.12	.....	2.12	2.00	14.29	18.00	1962
10.53	7.75	3.30	1.14	12.19	11.00	11.05	10.00	2.21	.....	2.21	2.00	15.02	15.00	1431
													13.75	1189
													15.00	1502
9.72	4.91	5.47	1.64	12.02	11.00	10.38	10.00	1.53	.....	*1.53	2.00	14.04	16.50	1587
11.13	5.76	4.27	1.22	11.25	11.00	10.03	10.00	2.05	.....	2.05	2.00	14.16	.....	1923
													18.00	1969
14.86	7.37	3.22	.65	11.24	11.00	10.59	10.00	2.04	.....	2.04	2.00	14.36	.....	1253
													14.00	1285
													15.00	1434
11.10	6.29	4.16	1.15	11.60	11.00	10.45	10.00	2.12	.....	2.12	2.00	14.49	13.50	1715
8.93	7.92	3.56	.68	12.16	12.00	11.48	10.00	2.18	.....	2.18	2.00	15.14	18.00	1247
													16.50	1257
10.00	8.05	2.39	.60	*11.04	12.00	10.44	10.00	2.42	.....	2.42	2.00	14.59	15.00	1207
													18.00	1166
													.....	1335
													15.00	1482

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Baltimore Pulverizing Co., Baltimore, Md.	
1714	†Pennimans Excelsior Fertilizer,	Gillen & Rice, Chambersburg,
1888		Ira Deiringer, Esther,
1298	†Special Fall Mixture,	Edgar From, McAlevy's Fort,
1713		Gillen & Rice, Chambersburg,
	Bowker Fertilizer Co., Boston, Mass.	
1672	Bone and Potash,	S. L. Egbert, Sandy Lake,
1208	†Empire State Bone and Potash,	Levin A. Lerch, Bethlehem,
1660		Jas. Bennett, Emlenton,
1316	†Superphosphate with Potash for Grass and Grain.	McClay Wilson, Belleville,
1215		B. F. McClune & Bro., Burgettstown,
1595		T. M. Smith, Jefferson,
	The Buffalo Fertilizer Co., Buffalo, N. Y.	
1236	Bone and Potash,	Raccoon Valley Club, New Sheffield,
	Eureka Fertilizer Co., Perryville, Md.	
1562	†Alkaline Bone and Potash,	Geo. W. Keller, Shermansdale,
1325		C. Schnure, Arnold,
1228		S. G. Matchett, Clinton,
1593		J. H. Bell, Jefferson,
4160		W. M. Davis, Greensborough,
	Griffith & Boyd, Baltimore, Md.	
1480	†Special Grain Grower,	H. J. Van Dyke, Gettysburg,
1289		Levi Berkey, Somerset,
1711		S. E. Shenk, Newville,
1479	XX Potash Mixture,	H. J. Van Dyke, Gettysburg,
1238	†XX Potash Manure,	Wm. H. Heckert, Bakerstown,
1771		John Artley, Muncy,
	Frank Hartranft, Coatesville, Pa.	
1932	Soluble Bone and Potash,	M. Hiddleson, Jr., Dowingtown,
	S. M. Hess & Bro., Philadelphia, Pa.	
1306	Peerless Phosphate,	Calvin Mirely, Alexandria,
1889	Emperor Phosphate,	S. M. Allison & Son, Hookstown,
	The Hubbard Fertilizer Co., Baltimore, Md.	
1349	Special Mixture of Bone and Potash,	W. F. Slogle, Bloomsburg,
	Lancaster Chemical Co., Lancaster, Pa.	
1450	†Economical Fertilizer No. 10,	C. J. Bushey, Dillsburg,
1837		M. J. Burkholder, Manheim,
	D. Levan, Lebanon, Pa.	
1812	Soluble Bone and Potash,	J. D. Sellers, Ephrata,
	Miller Fertilizer Co., Baltimore, Md.	
1973	Clinch Phosphate, Bone and Potash,	Miller Harkins, Hickory Hill,
	Nassua Fertilizer Co., New York, N. Y.	
1369	†Grass and Grain Fertilizer,	M. Gillis, Hughesville,
1357		D. N. Williams, Jerseytown,
1520		Geo. Ranbenhold, Hamburg,
	G. Ober & Sons, Baltimore, Md.	
1545	Standard Potash,	Wm. Atkinson, McVeytown,
	Ohio Farmers Fertilizer Co., Columbus, O.	
1242	Wheat Maker and Seeding Down,	B. F. McClure, & Bro., Burgettstown,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Computed commercial value at Department ratio.	Selling price at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
11.19	5.65	5.30	.70	11.65	.....	10.95	.....	2.51	.....	2.51	.....	15.09	15.50	1714
													16.00	1883
9.74	1.03	7.70	.83	9.56	.....	8.73	.....	1.43	.....	1.43	.....	12.46	15.50	1298
													12.00	1713
10.80	3.62	5.01	2.33	10.96	.....	8.63	.....	2.79	.....	2.79	.....	14.30	27.00	1672
9.88	4.72	3.44	1.15	9.31	9.00	8.16	8.00	3.03	.....	3.03	3.00	13.80	16.00	1208
													20.00	1660
10.40	4.89	5.58	1.70	12.17	11.00	10.47	10.00	1.57	.....	1.57	1.00	14.12	18.00	1316
													24.00	1245
													18.00	1595
9.70	7.39	4.65	5.00	17.04	11.00	12.04	10.00	.....	2.07	*2.07	8.00	17.34	17.07	1236
													.....	1562
													15.00	1325
14.00	2.88	8.97	2.11	13.96	12.00	11.85	10.00	1.33	.....	*1.33	2.00	15.07	14.00	1228
													17.00	1543
													18.00	1604
9.98	6.63	4.21	1.47	12.31	11.00	10.84	10.00	2.32	.....	2.32	2.00	15.09	13.50	1480
													14.00	1289
													15.00	1711
9.75	7.44	2.56	.79	*10.79	11.00	10.00	10.00	5.00	.....	5.00	5.00	16.99	17.50	1479
11.01	7.53	2.99	.85	11.37	11.00	10.52	10.00	4.41	.....	*4.41	5.00	16.76	20.00	1238
													18.00	1771
10.75	6.81	5.35	1.15	13.31	.....	12.16	10.00	1.51	.....	*1.51	2.00	15.10	.....	1932
10.47	9.00	3.12	.51	*12.63	14.00	12.12	12.00	5.02	.....	5.02	5.00	18.43	.....	1306
10.40	7.67	6.57	1.25	15.49	12.00	14.24	10.00	.....	.....	‡‡	1.00	13.92	20.00	1889
8.32	2.09	6.62	1.13	9.84	.....	*8.71	10.00	5.75	.....	5.75	4.00	16.95	16.00	1349
10.48	.60	7.25	2.87	*10.72	11.00	*7.85	10.00	2.00	.....	2.00	2.00	13.12	14.00	1450
													14.00	1837
11.33	1.18	9.41	1.04	11.63	.....	10.59	10.00	2.26	.....	2.26	2.00	14.71	12.50	1812
8.69	6.44	3.79	1.19	*11.42	11.50	10.23	10.00	3.32	.....	3.32	2.00	15.57	16.00	1973
11.87	6.68	3.81	.75	11.24	11.00	10.49	10.00	2.04	.....	2.04	2.00	14.32	15.00	1389
													13.50	1357
													15.00	1520
10.72	11.12	2.08	1.15	14.35	14.00	13.20	12.00	.67	4.95	5.62	5.00	20.92	20.00	1545
13.44	4.18	4.89	.97	10.04	.....	9.07	8.00	2.26	.....	*2.26	2.50	13.59	23.00	1242

*Constituent falls below guaranty
†Guaranteed .41 per cent. nitrogen.
‡No more potash found than is often present in dissolved rock.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Patapsco Guano Co., Baltimore, Md.	
1487	Patapsco H. G. Bone and Potash,	J. M. Reffensberger, York Springs,
1563	Patapsco Soluble Bone and Potash,	Jacob Fretz, New Bloomfield,
1263	Phosphate and Potash,	J. J. Leuman, Davidsville,
	Piedmont-Mt. Airy Guano Co., Baltimore, Md.	
1312	†I. X. L. Crop Grower,	John G. Simpson, Huntingdon,
1284		Jos. Miller, Listie,
1469		J. H. Little, Idaville,
1471	†Piedmont Soluble Bone and Potash,	J. H. Little, Idaville,
1310		John G. Simpson, Huntingdon,
1978		Dennis Timony, Oxford,
1468	†Piedmont Special Potash Mixture,	J. H. Little, Idaville,
1895		Dan'l Reinhart, New Providence,
	The Pollock Fertilizer Co., Baltimore, Md.	
1177	Soluble Bone Phosphate,	I. J. Dreese, Lemont,
1645	†Victor Bone Phosphate,	Benj. F. Shearer, Dublin,
1786		H. R. Beale, Oriental,
	Ramsberg Fertilizer Co., Frederick, Md.	
1464	Alkaline Phosphate,	H. J. Trostel, York Springs,
	Rasin-Monumental Co., Baltimore, Md.	
1493	Special Bone and Potash Fertilizer,	Jacob Markel, Hanover,
1790	†Special Formula for Corn & Buckwheat,	Kramer & Erdley, Kramers,
1614		H. F. Gump, Everett,
1950		Wilson & Mendenholl, Toughkenamon,
	Rochester Fertilizer Works, Rochester, N. Y.	
1179	Alkaline Bone Guano,	Sam'l Glenn, State College,
	Scott Fertilizer Co., Elkton, Md.	
1848	Fritch's Special for Grain and Grass,	L. W. Fritch, Macungie,
1803, 1500	†Tip Top and Potash,	Martin & Muth, Lititz,
1897		L. A. Geiger, Joanna,
		S. M. Book & Bro., Quarryville,
	M. L. Shoemaker & Co., Philadelphia, Pa.	
1804	Dissolved Bone and Potash,	C. B. Gochaer, Lititz,
1222	Dissolved Bone and Potash,	W. B. Fretz, Zion Hill,
	Southern Fertilizer Co., York, Pa.	
1741	Farmer's Mixture,	Lebernight & Ferree, Red Lion,
1294	Ox Brand Bone and Potash,	C. Putman, Barronvale,
1560	Ox Brand Bone and Potash Mixture,	H. L. Tressler, Newport,
1559	†Ox Brand Farmer's Mixture,	H. L. Tressler, Newport,
1909		M. Greenleaf, Kirkwood,
	I. P. Thomas & Sons Co., Philadelphia, Pa.	
1636	†Alkaline Bone,	Linford Foulke, Quakertown,
1453		D. F. Stitzel, York Springs,
1683		W. J. Moyer, Greenville,
1456	†Special Alkaline Bone,	D. F. Stitzel, York Springs,
1435		Chas. J. Beardsley, Noblet,
1303		Wm. Miller, Saulsburg,
1504		Frank Shaeffer, Fleetwood,
1510		Levi Miller, Sinking Spring,
1684	Special Corn Fertilizer,	W. J. Moyer, Greenville,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Computed commercial value at Department ratio.	Selling price at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
10.31	6.64	4.41	.92	*11.97	12.00	11.05	11.00	4.90	.....	*4.90	5.00	17.68	17.00	1487
13.79	7.42	4.17	.89	12.48	11.00	11.59	10.00	2.02	.....	2.02	2.00	15.12	15.00	1563
7.58	1.56	4.95	.62	7.13	.....	6.51	.....	3.26	.....	3.26	.....	12.63	15.00	1263
10.92	8.28	2.23	.32	10.83	.....	10.51	10.00	2.90	.....	*2.90	3.00	15.07	17.00	1312
													.....	1284
													15.50	1469
7.36	6.02	2.47	.40	8.89	.....	8.49	8.00	2.03	.....	2.03	2.00	12.75	13.75	1471
													15.00	1310
													.....	1978
9.43	8.26	2.17	.13	10.56	.....	10.43	10.00	4.57	.....	*4.57	5.00	16.59	17.00	1468
													15.00	1895
10.47	6.09	4.40	1.18	11.67	.....	10.49	10.00	2.24	.....	2.24	2.00	14.67	.....	1177
9.89	5.18	4.43	.77	10.38	10.00	9.61	9.00	1.22	.....	1.22	1.00	12.85	17.00	1645
													.....	1785
13.43	4.78	6.69	1.67	13.14	12.00	11.47	10.00	2.01	.....	2.01	2.00	15.32	14.50	1464
10.03	5.37	5.34	.50	11.21	.....	10.71	.....	5.22	.....	5.22	.....	17.59	16.50	1493
10.03	1.04	5.73	1.04	7.81	7.50	6.77	6.00	2.84	.....	*2.84	3.00	12.55	13.00	1790
													14.00	1614
													14.00	1950
11.94	.47	4.87	2.30	*7.64	11.00	*5.34	10.00	2.28	.....	2.28	2.00	11.43	.....	1179
12.32	10.24	3.71	1.59	15.54	14.00	13.95	13.00	6.22	.....	6.22	6.00	21.34	19.00	1848
13.43	8.93	3.75	2.39	15.01	13.00	12.68	11.00	2.20	.....	2.20	2.00	16.62	15.00	1803
													15.00	1500
													14.00	1897
11.64	7.38	3.62	.32	*11.32	12.00	11.00	10.00	2.47	.....	2.47	2.00	14.92	16.00	1804
9.32	8.22	3.22	.29	*11.73	12.00	11.44	10.00	2.96	.....	2.96	2.00	15.76	.....	1222
9.24	5.95	4.52	1.08	11.55	11.50	10.47	10.00	2.11	.....	2.11	2.00	14.47	15.00	1741
10.05	4.46	4.11	1.05	9.62	9.00	8.57	8.00	2.51	.....	2.51	2.00	13 50	14.25	1294
11.52	3.82	6.02	.83	10.67	9.00	9.84	8.00	2.18	.....	2.18	2.00	14.01	13.00	1760
12.92	7.38	3.73	.70	11.81	11.50	11.11	10.00	2.00	.....	2.00	2.00	14.68	13.50	1559
													.....	1999
10.86	7.07	3.10	.55	*10.72	12.00	10.17	10.00	2.26	.....	2.26	2.00	14.20	15.00	1636
													15.00	1453
													.....	1683
													18.00	1456
11.60	4.31	5.61	.87	*10.79	12.00	*9.92	10.00	2.80	.76	*3.56	4.00	15.61	17.00	1435
													16.00	1303
													15.75	1504
													16.50	1510
10.68	2.52	7.58	1.40	*11.50	12.00	10.10	10.00	5.54	.....	*5.54	6.50	17.84	22.00	1684

*Constituent falls below guaranty.

Sample number.	From Whom Sample Was Taken.	Manufacturer and Brand.
	Tuscarora Fertilizer Co., Baltimore, Md.	
1656	Tuscarora Alkaline,	Jas. Spengler, Klecknersville,
1655	Tuscarora Bone and Potash,	Jas. Spengler, Klecknersville,
	J. E. Tygert Co., Philadelphia, Pa.	
1511	Soluble Bone and Potash,	S. Bliveline & Co., Sinking Springs,
	Virginia-Carolina Chemical Co., Richmond, Va.	
1720	Standard Bone and Potash,	Greencastle Elevator Co., Greencastle,
1723	Union Superphosphate,	E. Daron, Dover,
	Walker Stratman & Co., Pittsburg, Pa.	
1589 1692	†Phosphoric Acid and Potash,	G. W. Hewett & Son, Carmichaels, W. J. Hotchkiss, Harmonsburg,
	W. E. Whann, Philadelphia, Pa.	
1746	Soluble Bone and Potash,	Jas. Yeager, Hamburg,
	Wooldridge Orchilla Co., Baltimore, Md.	
1320	German Alkaline Mixture,	A. W. Nale, Milroy,
	Rob't A. Wooldridge Co., Baltimore, Md.	
1401	German Potash Mixture,	John Bodenshatz, Wilmore,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Computed commercial value at Department ratio.	Selling price at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
10.03	7.76	2.77	.60	*11.13	12.00	10.53	10.00	5.16	.....	5.16	5.00	17.47	16.00	1655
9.44	8.35	2.55	.73	*11.63	12.00	10.90	10.00	2.32	.....	2.32	2.00	14.88	14.00	1656
13.44	7.84	3.06	.47	11.37	11.00	10.90	9.00	1.61	.....	*1.61	2.00	14.05	16.00	1511
9.57	4.16	6.76	.72	11.64	11.50	10.92	10.00	2.31	.....	2.31	2.00	14.88	13.00	1720
8.51	2.60	4.81	.42	7.83	7.50	7.41	6.00	3.46	.....	3.46	3.00	13.41	14.00	1723
9.85	3.90	6.14	.83	*10.87	11.00	10.04	10.00	1.56	.....	*1.56	2.00	13.51	16.50 17.50	1589 1692
7.48	2.13	7.91	.57	10.61	.....	10.04	10.00	2.30	.....	2.30	2.00	14.19	14.00	1746
8.23	5.64	5.26	1.61	12.51	11.00	10.90	10.00	2.04	.....	2.04	2.00	14.91	15.00	1320
10.98	6.29	4.85	.65	11.79	.....	11.14	10.00	1.36	.....	*1.36	2.00	14.05	8.00	1401

*Constituent falls below guaranty.

DISSOLVED BONE

Furnishing Phosphoric

Sample number.	From Whom Sample Was Taken.	Manufacturer and Brand.
	Baugh & Sons Co., Philadelphia, Pa.	
1158 1968	†Pure Dissolved Animal Bone, ...	D. W. Davis, Ebensburg, ... Geo. S. Snyder, Hatfield, ...
	Cambria Fertilizer Co., Johnstown, Pa.	
1268	Lion Ammoniated Bone Phosphate, ...	T. E. Crissman, Windber, ...
	The D. B. Martin Co., Philadelphia, Pa.	
1235 1956	†Pure Dissolved Animal Bone, ...	S. H. Purdy, Murdocksville, ... Ball & Rhodes, Media, ...
	Scientific Fertilizer Co., Pittsburg, Pa.	
1866	Bone and Meat, ...	R. J. Toepfer, Tarentum, ...
	F. W. Tunnell & Co., Philadelphia, Pa.	
1759 1824	†Raw and Acidulated Bone, ...	Geo. K. Linderman, Scotland Mills, ... Morris Briggs, Woodbourne, ...
	Walker Stratman & Co., Pittsburg, Pa.	
1529 1695	†Bone and Meat, ...	R. J. Wallace, Bishop, ... W. J. Hotchkiss, Harmonsburg, ...

†Composite sample.

FERTILIZERS.

Acid and Nitrogen.

Moisture in 100 pounds.	Phosphate Acid in 100 Pounds.							Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds of Department rating.	Selling price at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.						
				Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.			
6.98	3.77	10.30	2.69	16.76	.....	14.07	13.00	2.57	2.06	30.39	27.50	1158
											.....	1968
4.35	5.84	3.71	2.68	12.23	.....	9.55	.....	3.14	.....	28.05	33.00	1268
8.70	5.76	6.85	4.70	17.31	14.00	12.61	12.00	*1.46	1.65	25.17	23.00	1235
											23.00	1956
5.22	1.60	4.40	9.06	15.06	.....	*6.00	16.00	3.56	3.30	28.94	24.00	1866
6.81	5.36	6.11	8.87	20.34	20.00	11.47	10.00	*1.39	1.65	25.72	23.00	1759
											25.00	1824
4.22	1.45	5.42	10.75	17.62	16.00	6.87	.....	*2.98	3.30	28.36	23.00	1529
											23.00	1695

*Constituent falls below guaranty.

GROUND BONE

Furnishing Phosphoric

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Allegheny City Fertilizer Works, Allegheny, Pa.	
1532	Butchers Bone Meal,	Canonsburg Milling Co., Canonsburg,
1534	Pure Raw Bone Meal,	Canonsburg Milling Co., Canonsburg,
	The American Agricultural Chemical Co., New York, N. Y.	
1404	†Fine Ground Bone,	N. G. Gramling, Elton,
1397		H. T. Beatty, Saltsburg,
1418		H. Frank Gump, Everett,
	Milsom Branch, Buffalo, N. Y.	
1687	Pure Ground Bone,	W. B. Denny, Meadville,
	M. E. Wheeler & Co. Branch, Rutland, Vt.	
1668	Pure Ground Bone,	W. F. Zohniser, Jackson Center,
	American Reduction Co., Pittsburg, Pa.	
1218	Fine Ground Bone,	Chas. E. Ashlum, Richlandtown,
	Armour Fertilizer Works, Chicago, Ill.	
1864	Bone Meal,	Chas. T. Wills & Co., Parnassus,
1382	Raw Bone Meal,	W. L. & H. L. Myers, Doylestown,
	Bradley & Green, Philadelphia, Pa.	
1394	Fine Ground Bone,	H. Doyle, Roxborough,
	Chicago Fertilizer Co., Chicago, Ill.	
1688	Raw Bone,	H. J. Ouspaugh, Meadville,
	Josiah Cope & Co., Lincoln University, Pa.	
1907	†Ground Raw Bone,	Josiah Cope & Co., Oxford,
1922		Chas. S. Sell, Bryn Mar,
1417	†Ground Steamed Bone,	H. Frank Gump, Everett,
1908		Josiah Cope & Co., Oxford,
	S. M. Hess & Bro., Philadelphia, Pa.	
1659	Ground Bone,	Alfred Smith, Pennsville,
	Lackawanna Fertilizer and Chemical Co., Moosic, Pa.	
1428	Warranted Pure Ground Bone,	E. J. Harley, Meshoppen,
	The D. B. Martin Co., Philadelphia, Pa.	
1880	Bone Meal,	J. A. Little, Washington,
1872	†Ground Bone,	J. H. Thompson, Harmarville,
1929		Wells & Walker, Downingtown,
1875	Ground Bone,	Wm. E. Richardson, Chalfont,
	Nassau Fertilizer Co., New York, N. Y.	
1618	Bone Meal,	A. M. McClure, Everett,
1617	Pure Ground Bone,	A. M. McClure, Everett,
	Ohio Farmers' Fertilizer Co., Columbus, Ohio.	
1214	Raw Bone Meal,	B. F. McClure & Bro., Burgettstown,

†Composite sample.

FERTILIZERS.

Acid and Nitrogen.

Moisture in 100 pounds.	Mechanical Analysis.		Chemical Analysis.				Computed commercial value of 2,000 pounds of Department rating.	Selling price at the point of selection.	Sample number.
	Diameter less than 1-50 inch "fine."	Diameter greater than 1-50 inch, "coarse."	Phosphoric Acid.		Nitrogen.				
			Found.	Guaranteed.	Found.	Guaranteed.			
3.79	77	23	*15.77	16.00	3.41	3.30	24.33	24.00	1532
4.60	71	29	20.62	22.00	3.91	3.30	28.94	28.00	1534
4.78	81	19	26.14	22.80	3.48	2.47	32.05	26.00	1404
								26.00	1397
								30.00	1418
8.04	82	18	24.30	.....	2.69	.....	28.36	27.00	1687
7.62	57	43	21.91	.....	2.43	.....	24.98	28.00	1668
4.68	57	43	*21.37	23.00	3.73	3.30	28.40	29.00	1218
5.14	87	13	26.13	24.00	2.56	2.47	29.44	27.00	1864
6.99	55	45	23.86	22.00	3.71	3.71	29.84	26.00	1382
3.02	82	18	25.38	.....	2.17	.....	27.46	27.00	1394
3.43	80	20	32.65	27.00	*1.11	1.24	29.26	28.00	1688
6.29	78	22	24.91	.....	3.13	.....	29.96	27.00	1907
								28.00	1922
5.31	73	27	25.00	23.00	2.66	2.47	28.33	28.00	1417
								25.00	1908
4.15	71	29	24.62	18.32	*2.92	3.30	28.70	28.00	1650
5.53	64	36	23.38	23.00	4.17	3.71	31.27	32.00	1428
6.00	77	23	22.98	22.00	*3.37	3.71	29.22	.....	1880
5.50	87	13	25.15	24.00	2.06	1.65	27.20	25.00	1872
7.60	78	22	*23.97	24.00	1.87	1.65	25.40	26.00	1929
								27.00	1375
6.85	77	23	16.78	13.70	2.10	1.65	21.15	26.00	1618
6.90	67	33	20.91	20.60	3.71	3.30	28.39	29.00	1617
8.16	65	35	32.29	27.00	*.78	1.24	27.45	28.00	1244

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Pittsburg Provision and Packing Co., Pittsburg, Pa.	
1882	No. 1 Raw Bone Meal,	Geo. B. Sprouls, Claysville,
	Pugh & Lyons, Oxford, Pa.	
1905	Ground Raw Bone,	S. R. Dickey & Co., Oxford,
	Rochester Fertilizer Works, Rochester, N. Y.	
1630	Pure Ground Bone,	W. A. Baver, Bradley Junction,
	Schaal-Sheldon Fertilizer Co., Erie, Pa.	
1542	Pure Bone Meal,	I. W. Scott & Co., Pittsburg,
	Scientific Fertilizer Co., Pittsburg, Pa.	
1868	Pure Raw Bone Meal,	R. J. Toepfer, Tarentum,
	M. L. Shoemaker & Co., Philadelphia, Pa.	
1921	Pure Raw Bone Meal,	Herbert Hansel, Grossland,
1941	Swift Sure Bone Meal,	W. H. Matlock, West Chester,
	Swift & Co., Chicago, Ill.	
1156	Bone Meal,	D. W. Davis, Ebensburg,
1527	Swift's Bone Meal,	Canonsburg Milling Co., Canonsburg,
1947	Pure Bone Meal,	Thomas & Haines, Malvern,
1157	Pure Raw Bone Meal,	D. W. Davis, Ebensburg,
	I. P. Thomas & Sons Co., Philadelphia, Pa.	
1936	Fine Ground Bone,	Griffith & Wallerton, Downingtown,
1302	†Pure Ground Bone,	Wm. Miller, Saulsburg,
1681		William J. Moyer, Greenville,
	F. W. Tunnell & Co., Philadelphia, Pa.	
1825	Pure Ground Bone,	Morris Briggs, Woodbourne,
	Tuscarora Fertilizer Co., Baltimore, Md.	
1594	Animal Bone,	T. M. Smith, Jefferson,
	Emil Wahl, Philadelphia, Pa.	
1927	Warranted Pure Button Bone Dust,	R. C. Fairlamb & Co., Chester Heights,
	Walker Stratman & Co., Pittsburg, Pa.	
1530	†Pure Raw Bone Meal,	R. J. Wallace, Bishop,
1239		Wm. H. Heckert, Bokerstown,
1693		W. J. Hotchkiss, Harmonsburg,
	F. K. Walt & Co., Supplee, Pa.	
1648	Ground Animal Bone,	J. B. Rosenberger, Dublin,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Mechanical Analysis.		Chemical Analysis.				Computed commercial value of 2,000 pounds of Department rating.	Selling price at the point of selection.	Sample number.
	Diameter less than 1-50 inch "fine."	Diameter greater than 1-50 inch, "coarse."	Phosphoric Acid.		Nitrogen.				
			Found.	Guaranteed.	Found.	Guaranteed.			
5.15	76	24	25.31	*26.00	*3.26	3.71	30.45	25.00	1882
6.74	38	62	23.06	20.00	3.82	3.30	28.81	28.00	1905
5.33	67	33	24.79	.....	3.52	*3.71	30.44	24.00	1630
5.38	53	47	20.62	22.00	3.60	3.30	27.28	30.00	1542
5.02	74	26	*	22.00	3.39	3.30	28.22	27.00	1868
4.50	94	6	24.91	20 00	3.80	2.47	32.68	.....	1921
3.54	93	7	23.82	20 00	5.07	4.12	35.73	.....	1941
4.78	79	21	27.26	25.00	*2.07	2.47	28.32	25.00	1156
3.68	78	22	27.99	25.00	*2.02	2.47	28.65	25.00	1527
3.14	81	19	26.65	25.00	*2.38	2.47	29.06	26.00	1947
5.95	62	38	24.08	23.00	4.15	3.71	31.64	27.50	1157
3.70	87	13	23.13	.....	2.33	.....	26.70	27.00	1936
								26.50	1302
3.91	79	21	*20.52	21.00	*2.21	3.30	24.09	27.00	1681
9.34	80	20	25.37	25.00	*2.16	2.47	27.34	32.00	1825
3.53	100	.....	25.15	24.00	*2.14	2.47	28.02	25.00	1594
10.09	75	25	24.28	23.70	3.36	3.29	30.02	.....	1927
6.14	69	31	*21.29	22.00	3.51	3.30	28.14	26.00	1530
								25.00	1239
								26.00	1693
5.95	50	50	19.72	.....	3.19	.....	25.42	28.00	1648

*Constituent falls below guaranty.

ACIDULATED

Furnishing

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	American Agricultural Chemical Co., New York, N. Y.	
	Lazaretto Guano Branch, Baltimore, Md.	
1890	Lazaretto Dissolved Bone Phosphate, ...	W. S. Stevenson, Hookstown, ...
	Maryland Branch, Baltimore, Md.	
1400	Maryland Dissolved S. C. Phosphate, ...	Smith & McKelvey, Blairsville, ...
	Milsom Branch, Buffalo, N. Y.	
1599	†Acid Phosphate, ...	Gordon & Hoffman, Waynesburg, ...
1687		P. A. McDowell, Atlantic, ...
1365	†Dissolved Bone Phosphate, ...	P. W. Opp, Opp, ...
1176		H. T. Beatty, Saltsburg, ...
1399		Smith & McKelvey, Blairsville, ...
	Pacific Guano Branch, New York, N. Y.	
1355	†Pacific Dissolved Bone Phosphate, ...	Howard Greenley, Jerseytown, ...
1847		Wm. M. Gehman, Macungie, ...
	Reese Branch, Baltimore, Md.	
1206	†Dissolved Phosphate of Lime, ...	Frank C. Williams, Easton, ...
1957		Boll & Rhodes, Media, ...
	Sharpless & Carpenter Branch, Philadelphia, Pa.	
1190	Acid Phosphate, ...	Chas. McCormick, State College, ...
	Susquehanna Branch, Baltimore, Md.	
1473	†Soluble Bone Phosphate, ...	Z. J. Peters, Guernsey, ...
1712		H. Manning & Son, Newville, ...
	Tygert-Allen Branch, Philadelphia, Pa.	
1939	Howitz Acid Phosphate, ...	W. H. Matlack, West Chester, ...
	Williams & Clark Branch, New York.	
1173	†Acorn Acid Phosphate, ...	James Harbison, Indiana, ...
1174		H. T. Beatty, Saltsburg, ...
1439	Acorn Brand, ...	A. C. Gustin, E. Smithfield, ...
	Zell Guano Branch, Baltimore, Md.	
1489	†Dissolved Bone Phosphate, ...	O. F. Arnold, Clearfield, ...
1584		Shell Hdw. Co., Connelsville, ...
	Armour Fertilizer Works, Chicago, Ill.	
1248	†Cereal Phosphate.	A. H. Walker, Burgettstown, ...
1199		McCalmont & Co., Bellefonte, ...
1164		Frank Douglass, Indiana, ...
1367		E. W. Michael, Hughesville, ...
1402		Peter Shank, Solix, ...
1188	†Star Phosphate, ...	McCalmont & Co., Bellefonte, ...
1163		Frank Douglass, Indiana, ...
1260		Cook & Beerits, Somerset, ...
1334		J. W. Painter & Co., Lewisburg, ...
	Baugh & Sons, Philadelphia, Pa.	
1192	†High Grade Acid Phosphate, ...	F. W. Archey, Penn'a Furnace, ...
1161		D. W. Davis, Ebensburg, ...
1483		H. D. & C. C. Bream, Gettysburg, ...

†Composite sample.

ROCK PHOSPHATES.

Phosphoric Acid.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value of 2,000 pounds of Department rating.	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.				
				Found.	Guaranteed.	Found.	Guaranteed.			
7.98	10.45	5.34	.93	16.72	15.00	15.79	14.00	14.90	14.00	1890
12.65	9.70	4.83	1.31	15.84	15.00	14.53	14.00	14.14	13.50	1400
10.74	9.09	5.30	1.70	16.09	15.00	14.39	14.00	14.18	18.00	1598
									14.00	1678
10.60	6.91	5.42	2.05	14.38	13.00	12.33	12.00	12.84	15.00	1365
									13.00	1176
									12.50	1399
8.31	10.45	3.89	.59	*14.93	15.00	14.34	14.00	13.75	12.00	1355
									15.00	1847
10.27	10.90	3.05	1.06	15.01	15.00	*13.95	14.00	13.63	13.00	1206
									13.00	1957
9.13	11.28	3.93	.93	16.14	15.00	15.21	14.00	14.50	12.75	1190
8.15	11.56	4.21	.47	16.24	15.00	15.77	14.00	14.72	13.00	1473
									13.50	1712
6.30	9.78	5.74	.96	16.48	15.00	15.52	14.00	14.74	.....	1939
10.63	7.30	5.09	3.35	15.74	15.00	*12.39	14.00	13.34	.....	1173
7.77	13.31	3.30	.28	16.89	15 00	16.61	14.00	15.26	15.00	1174
									15.00	1439
10.27	10.17	4.11	1.38	15.66	15 00	14.28	14.00	13.96	13.50	1489
									17.00	1584
6.45	7.42	4.51	.83	12.76	12.00	11.93	10.00	12.08	15.00	1218
									11.50	1199
									14.00	1164
									13.00	1367
									14.00	1402
9.38	12.16	2.74	.83	*15.73	16 00	14.90	14.00	14.24	13.00	1188
									15.00	1163
									15.00	1260
									.....	1334
9.13	10.63	5.05	.74	16.42	.....	15.68	14.00	14.74	12.50	1192
									13.00	1161
									12.50	1483

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	E. Frank Coe Co., New York, N. Y.	
1658	H. G. Soluble Bone Brand,	Peter Hogenbuck, Bath,
	Eureka Fertilizer Co., Perryville, Md.	
1607	K. and G. Acid Phosphate,	W. M. Davis, Greensborough,
1590	†P.and P. Superphosphate,	J. H. Bell,
1606		W. M. Davis, Greensborough,
	Griffith & Boyd, Baltimore, Md.	
1407	†H. G. Acid Phosphate,	Varner & Iches, Elton,
1784		H. R. Beale, Oriental,
	Hubbard Fertilizer Co., Baltimore, Md.	
1777	H. G. Soluble Tennessee Phosphate,	Joseph Long, Flemington,
	Lackawanna Animal Product Co., Maosic, Pa.	
1182	Acid Phosphate,	Ezra S. Tressler, Penn'a Furnace,
	The D. B. Martin Co., Philadelphia, Pa.	
1231	14 Per Cent. Acid Phosphate,	S. H. Purdy, Murdocksville,
	Nassau Fertilizer Co., New York, N. Y.	
1370	†Soluble Bone Phosphate,	M. Gillis, Hughesville,
1356		D. N. Williams, Jerseytown,
1445		Ogden & Rockwell, Canton,
	G. Ober & Sons, Baltimore, Md.	
1452	†Dissolved Bone Phosphate,	G. W. Altland, York,
1546		Wm. Atkinson, McVeytown,
	Ohio Farmer's Fertilizer Co., Columbus, O.	
1241	Superior Phosphate,	B. F. McClure & Bro., Burgettstown,
	Patapsco Guano Co., Baltimore, Md.	
1187	†Pure Dissolved S. C. Bone,	L. H. Musser, Bellefonte,
1411		R. W. Robinson, Hollidaysburg,
	Piedmont-Mt. Airy Guano Co., Baltimore, Md.	
1470	Diamond Soluble Bone,	J. H. Little, Idaville,
1313	Piedmont H. G. S. C. Bone,	John G. Simpson, Huntingdon,
	Pittsburg Provision and Packing Co., Pittsburg, Pa.	
1580	†Acid Phosphate,	W. S. Colborn, Mill Run,
1603		W. M. Davis, Greensborough,
	Pollock Fertilizer Co., Baltimore, Md.	
1415	†Dissolved S. C. Bone,	J. A. C. Rider, Tyrone,
1178		I. J. Dreese, Lemont,
1632		W. A. Baver, Bradley Junction,
	Ramsburg Fertilizer Co., Frederick, Md.	
1463	Dissolved Bone Superphosphate,	H. J. Troestel, York Springs,
	Rasin-Monumental Co., Baltimore, Md.	
1419	†Acid Phosphate,	H. Frank Gump, Everett,
1700		John M. Ferenee, Dillsburg,
1420	Sea Wall Special,	H. Frank Gump, Everett,
	Scott Fertilizer Co., Elkton, Md.	
1898	Tip Top Soluble Bone,	S. M. Book & Bro., Quarryville,

†Composite sample.

PHOSPHATES—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value of 2,000 pounds of Department rating.	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.				
				Found.	Guaranteed.	Found.	Guaranteed.			
11.32	9.71	4.24	5.28	19.23	16 00	*13.95	14.00	15.15	12.00	1658
10.88	9.69	5.33	1.54	16.56	13.00	15.02	12.00	14.56	16.00	1607
11.73	9.56	4.85	1.64	16.05	15.00	14.41	14.00	14.17	14.50 17.00	1590 1606
6.45	10.91	3.17	2.59	16.67	15.00	14.08	14.00	14.25	12.50	1407 1784
10.63	13.07	2.87	.51	16.45	.....	15.94	14.00	14.86	14.00	1777
14.05	7.68	5.45	2.88	16.01	15.00	*13.13	14.00	13.70	12.50	1182
7.59	10.76	4.21	1.03	16.00	16.00	14.97	14.00	14.35	13.50	1231
10.56	11.64	4.40	.51	16.55	15.00	16.04	14.00	14.94	14.00 12.00 14.00	1370 1356 1445
10.78	12.61	3.47	.50	16.58	16.00	16.08	14.00	14.97	12.50 14.00	1452 1546
10.16	7.79	5.68	3.66	17.13	.....	13.47	10.00	14.24	14.00	1241
10.69	11.53	2.84	1.17	15.54	15.00	14.37	14.00	13.99	13.00	1187 1411
11.23	9.81	2.74	.16	12.71	.....	12.55	10.00	12.30	12.25	1479
10.71	12.18	1.84	.05	14.07	.....	14.02	14.00	13.30	13.00	1313
6.35	5.56	7.11	1.98	14.65	14.00	*12.67	13.00	13.03	15.00 17.00	1780 1603
9.08	11.15	3.74	1.98	16.87	15.00	14.89	14.00	14.64	14.00 ..... 12.40	1417 1178 1632
12.95	8.34	6.29	2.01	16.64	16.00	14.63	14.00	14.47	13.50	1463
9.84	11.12	4.16	.43	15.71	15.50	15.28	14.00	14.35	13.00	1419
7.40	4.91	5.89	1.28	12.08	11.50	10.80	10.00	11.44	12.00 12.00	1700 1420
7.50	10.61	5.00	1.80	17.41	16.00	15.61	14.00	15.08	12.50	1898

*Constituent falls below guaranty.

Sample number.	Manufacture and Brand.	From Whom Sample Was Taken.
	M. L. Shoemaker & Co., Philadelphia, Pa.	
1940	Swift Sure Dissolved S. C. Rock, ...	W. H. Matlock, West Chester, ...
	Southern Fertilizer Co., York, Pa.	
1171 1558	†Dissolved Bone Phosphate, ...	J. L. Peterman, Indiana, ... H. L. Tressler, Newport, ...
	I. P. Thomas & Sons Co., Philadelphia, Pa.	
1437 1324 1615	†S. C. Phosphate, ...	Chas. J. Berdsley, Noblet, ... Wm. Taylor, Reedsville, ... H. Frank Gump, Everett, ...
	James Thomas, Williamsport, Pa.	
1315	Dissolved Soluble Bone Phosphate, ...	L. M. Watt, Belleville, ...
	Tuscarora Fertilizer Co., Baltimore, Md.	
1600	Tuscarora Phosphate, ...	Gordon & Hoffman, Waynesburg, ...
	J. E. Tygert Co., Philadelphia, Pa.	
1512	Dissolved Bone Phosphate, ...	S. Blimbine & Co., Sinking Springs, ...
	The Wooldridge Orehilla Co., Baltimore, Md.	
1327	Orchilla Guano, ...	S. W. Rutherford, Laurelton, ...
1319	Orchilla Guano, ...	A. W. Nole, Milroy, ...
	Rob't A. Wooldridge Co., Baltimore, M. D.	
1193 1328	†Florida Acid Phosphate, ...	J. W. Baisor, Benore, ... C. C. Catharman, Hartleton, ...
	Henry S. Zook, Elverson, Pa.	
1517	Clear Acid Phosphate, ...	Wm. Wooley, Gonglersville, ...

†Composite sample.

PHOSPHATES—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value of 2,000 pounds at Department rating. (See p. ——.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.				
				Found.	Guaranteed.	Found.	Guaranteed.			
5.65	12.05	4.13	1.38	17.56	14.00	16.18	12.00	15.36	.....	1940
10.82	11.33	3.14	1.70	16.17	15.50	14.47	14.00	14.22	14.00	1171
									12.00	1558
12.71	12.11	2.55	.35	*15.01	16.00	14.66	14.00	13.88	16.00	1437
									12.50	1324
									13.00	1615
7.50	10.93	4.39	.79	16.11	14.00	15.32	12.00	14.50	12.00	1315
3.39	7.54	5.03	.30	12.87	12.00	12.57	10.00	12.34	16.00	1600
14.15	12.24	2.41	.51	15.16	.....	14.65	.....	13.93	16.00	1512
13.46	.10	8.49	12.23	20.82	17.00	8.59	4.00	13.78	17.25	1327
12.38	.11	9.35	12.07	21.53	.....	9.46	.....	14.36	18.00	1319
10.02	11.03	3.66	1.47	16.16	.....	14.69	14.00	14.31	13.00	1193
									12.50	1328
9.59	10.38	4.99	1.76	17.13	15.00	15.37	14.00	14.92	13.00	1517

*Constituent falls below guaranty.

MISCELLANEOUS

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	G. & W. H. Corson, Plymouth Meeting, Pa.		
1442	†Corson's Prepared Lime and Potash, ..	A. B. Carney, LeRoy, ...	.....
1448		Sucesa & Case, Troy, ...	.....
	Jacob Reese, Philadelphia, Pa.		
1180	Odorless Slag Phosphate, ...	John Hamilton, State College, ...	.30

FERTILIZERS.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Nitrogen in 100 lbs.				
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.	Computed commercial value of 2,000 pounds of Department rating.	Selling price at the point of selection.	Sample number.
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
.....	.....	.....	.....	.....	.....	.....	.....	.....	*2.01	3.00.	.....	.....	.....	17.50	1442
														17.50	1448
.15	5.94	13.95	20.04	17.00	6.09	.....	.....	.....	.....	.....	.....	.....	.....	16.00	1180